

JUN 30 1924
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Vernon Photographs in This Issue.

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AMERICAN ARTISAN and Hardware Record

Vol. 87. No. 26.

620 SOUTH MICHIGAN AVENUE, CHICAGO, JUNE 28, 1924.

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American Artisan & Hardware Record,
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Book of complete instructions for installing and operating system	5.00

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Transfer Binder for Job Tickets
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1 Set Trial Balance Sheets for 12 months
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1 Book of complete instructions for installing and operating system.

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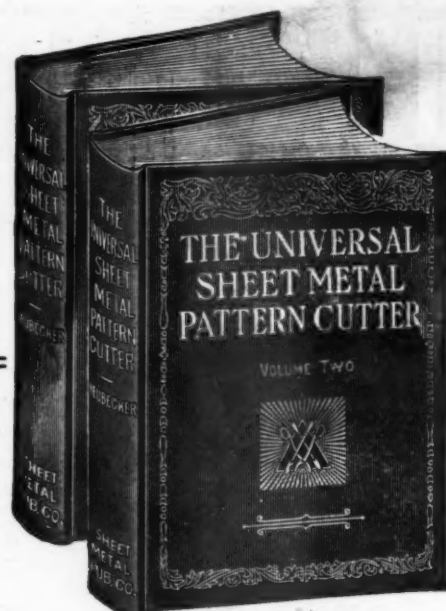
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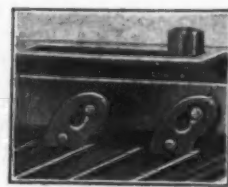
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Write that in your Don't-Forget-Book.

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Operator in position with blades open.



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Peoria, Illinois

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Warm Air Furnace
Sheet Metal, Stove
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620 South Michigan Avenue
CHICAGO, ILLINOIS

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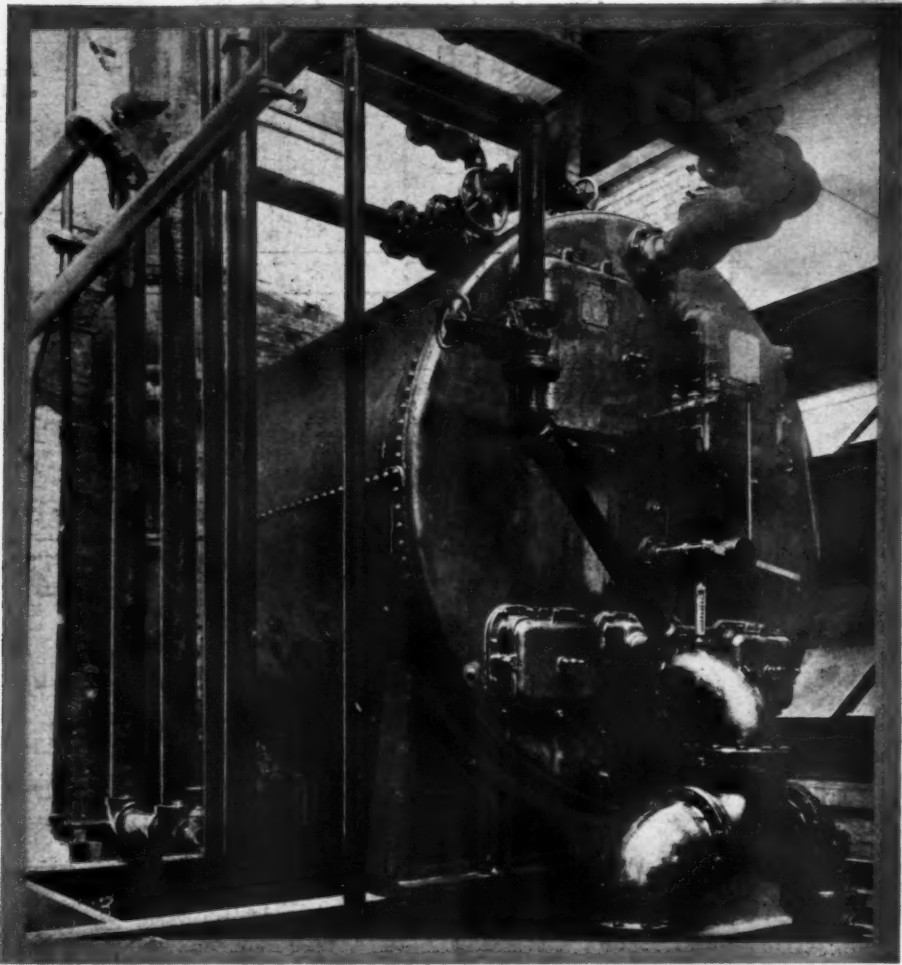
INVITING YOU!

The editorial columns of AMERICAN ARTISAN are devoted to the development and perpetuation of the Warm Air Heating, Stove and Range, Sheet Metal and Hardware industries. Its readers are cordially invited at all times to use this commonsense method of obtaining the advice they need for the successful conduct of their business.

If your problem is a knotty or technical one, submit it to the Service Department and secure the benefits of the opinions of other men. It is an exchange information department, and you are asked to relate your accomplishments and tell how you have surmounted difficulties. Wherever possible rough sketches or photographs should accompany the questions or suggestions, as they always make clear the points involved. Use this Service Department freely; it is yours.

Answers to all questions will be held strictly confidential if so desired by the sender. If no mention is made to the contrary, questions and answers will be published in the various departments of AMERICAN ARTISAN.

ALPHABETICAL INDEX AND CLASSIFIED LIST OF ADVERTISERS, Pages 44-46-48.



This is a 4000 h. p. Class EDA Feed Water Heater manufactured by Warren Webster & Co., Camden, N. J. It is on top of the Victor Talking Machine Plant.

Proof by Performance

YOU know what that means.
Well, this heater has seen 10
years of hard use, and it is still
giving perfect service.



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The shell is made of ARMCO Ingot Iron.

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THE ARMCO INTERNATIONAL CORPORATION

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Work—Serve—Share—Three Great Words Which May Mean Little or Much to You



IF WE WERE to summarize the Twentieth Annual Convention of the National Association of Sheet Metal Contractors in one word, our selection would be—"Service."

Service to the members.

Service to every sheet metal contractor.

Service to the sheet metal industry at large.

Service to the general public.

Twenty years ago—next February—the National Association of Sheet Metal Contractors was organized by a handful of men who had vision enough to realize that only by rendering real service to their fellow men could they, and the industry of which they were a part, ever hope to raise themselves out of mediocrity and out of the "tinnners'" class.

These men, some of whom are still with us and among the leaders in the sheet metal contracting business, had to overcome many difficulties, the principal one being plain indifference, but through the twenty years they have kept on—working, serving, sharing—and as a result the National Association of Sheet Metal Contractors stands today as an organization which means better material, better workmanship, better business standards.

And as a direct result of this work, the sheet metal contractor who adheres to the principles set down by the Association is making better profits and is regarded as a real business man instead of as a mere "tinker."

The Twentieth Annual Convention is history now. Our report was published on pages 45 to 75 of the June 21st issue of *American Artisan*, in spite of the fact that the President's gavel fell on the closing session at nearly one o'clock Friday afternoon, June 20th.

We believe the retiring officers have reason to pride themselves on the work that was accomplished during 1923-24. Past President

John A. Pierpoint was placed among the Trustees and the new officers will have his wise counsel for at least three years to come. Many local and state associations were organized, most of which are operating successfully. The finances of the National are in good shape. The Trade Development Committee is rounding up its work on the Sheet Metal Data Book which it now appears will be ready by the time of the 1925 Convention. To Paul F. Brandstedt the chief credit for this accomplishment—a very great one—is due.

One of the best things that the Convention did was in the election of officers for the coming year. It would be difficult to select a group of men who, by their personal record as business men, in their own organization and in their own community, had proved themselves so well fitted for the duties that have been placed upon them, and we may well look for still greater progress—in memberships, usefulness, service during the period of 1924-25.

To President Markle and his fellow officers and trustees we offer every facility of *American Artisan* and our heartiest cooperation in their work for the further improvement of conditions in the sheet metal trade. Under their guidance the Association is certain to grow in influence and usefulness to its members.

It is, however, only proper to state at this point that their work will be successful in proportion to the cooperation given them by each individual member. No set of officers, no matter how willing to work and no matter how efficient, can accomplish the fullest measure of success in their undertaking unless the members—each individual—render them free-hearted support.

By so doing you will serve your own interests better.

Random Notes and Sketches.

By Sidney Arnold

"Les" Taylor, the well known penochle expert, called at a real estate office one day recently with the idea of interesting them in International heaters. J. M. Beech was with him and vouches for the facts related in the following.

It seems that the two real estate men had been discussing ways and means for increasing their sales and naturally they concluded to do some advertising. One of them had begun to compose a newspaper announcement and was just reading the "copy" to his partner when "Les" and Beech came in. They were asked to listen. The introduction urged impending purchasers to seize the passing moment.

"Napoleon," the man read, "not only met opportunity; he created it."

The partner repeated the sentence and considered it carefully. Finally he said:

"This fellow, Napoleon, who is he and what is the use of advertising him with our money?"

* * *

Thomas J. Kelleher, who sells the Chicago steel bending brakes, was out for a little vacation trip some time ago and stayed over night at a small town hotel. Wishing to catch an early morning train he asked the landlady for the loan of an alarm clock.

She produced the clock and remarked, "We don't often use it, sir, and sometimes it sticks a bit, but if it doesn't go off, just touch that little hammer and it'll ring all right."

* * *

John Lorenz, of the Chicago Furnace Supply Company, told the following story the other day while we were talking politics and baseball and fishing. I believe he took his cue from a remark that I made about a certain well known amateur fisher:

Two men were boasting about their brothers. The first one said:

"My brother once went to a billiard match, picked up a ball in his right hand and another in his left, squeezed them, and the result was powder."

"That's nothing," said the other. "My brother once went to a farm, and he took a bull in the left hand and one in the right; he squeezed them; result—bottle of meat extract."

* * *

That this is vacation time is brought very pleasantly to my mind by the many friends who drop in to see me while going through Chicago. Among this week's visitors were Mr. and Mrs. C. H. Knowles, Little Rock, Arkansas; they are on their way home from a trip by auto to New York.

* * *

"Talk is cheap, but it takes money to buy whiskey, especially in these days," said Joe Burgess to me the other day, while we were lunching at the Rock Island Club, where the "Exchangeites" have their meetings. He was referring to some remarks that had been made by one of the speakers, and to emphasize his statement he told this story about Orville Wright, the aeroplane manufacturer:

Orville Wright at a dinner in Dayton was reproached for not taking up the challenge of the Smithsonian Institution that it was Langley, not the Wrights, who was the first to fly. "The trouble with you, Orville," said a banker, "is that you are too taciturn. You don't assert yourself enough. You should press-agentize more."

"My dear friend," Orville Wright answered, "the best talker and the worst flyer among the birds is the parrot."

* * *

Bill Lamneck, who keeps the wheels moving in their factory, while Arthur is out telling the sheet

metal and furnace men how they can increase their profits by using their furnace pipe, says that his experience shows that most men's successes are built on the following formula, the ingredients being properly mixed:

Ability—Five per cent.

Pep—Five per cent.

Hard Work—Five per cent.

Ambition—Ten per cent.

Sticking—Seventy-five per cent.

And I am inclined to agree with Bill—even to the point of the percentages. No business ever became truly successful without ability, hard work, pep and sticking-to-it.

Hard work, by itself, never gets far; it is necessary to have intelligent direction and driving force, and most of all the quality of keeping at it.

The "wisher" never succeeds because he lacks real ambition and will to plan and work.

The "plugger" seldom gets anywhere. He may make a living, but too often he lacks vision and ambition. He is too easily satisfied.

The "dreamer" is more than likely to forget that it takes hard work and initiative to gain the goal that he can see, so he never reaches the goal.

The "sticker" is more likely to succeed, because he is usually a man of determination and good sense, but unless he has a fair degree of ambition he will fail.

It takes a combination of them all. That is why so many men remain in the common class.

* * *

I wouldn't be in "Rudy's" shoes this week, although I wouldn't mind having a chance to watch the "dimmycrats" picking a presidential candidate as he has, being a delegate from the district in which the Rudy Furnace Company is located. A. E. Rudolphi, as he is known formally, is in New York as a delegate to the National Democratic Convention, but he says in a letter to me that although some folks may think attending a National Convention a pleasure, he calls it real work—trying to find a big man for a big job.

A. De Rosa Discusses Oil Burner Potentialities at Atlantic City Convention.*

Talk Based Upon Thorough Investigation—Says Coal Shortage Gave Industry Initial Impetus.

IF YOU had sent the members home without further discussion on oil burners, there would have been a great disappointment to the members, because many of them came from long distances to learn something about this new era of heating. I am not an expert on oil burners, but I have had some experience. I know that there are a great many of our members who are interested in oil burners, because of recent articles that appeared in various trade magazines that I have written, and in the past three or four weeks I received as many as fifteen letters a day from various heating contractors in this country and Canada.

Because of the many letters received I was compelled to make my reply in a form letter, as to answer every one individually would have taken up all of my time. Many of those whom I have written to are here today. Some of those I wrote to personally. I advised them to come to this convention as the oil burning question would be taken up and discussed and, no doubt, they would learn something about oil burning. I intended to bring this matter up this morning, but the discussion was closed without warning. I am glad that it came up this afternoon in the business meeting, so that the members only will receive the benefit of what I have to say.

For two years I have been investigating the oil burners quite thoroughly, because of the great demand by the public for burners in our city. The oil burner business is a peculiar one, requiring much study and investigation.

What prompted me to investigate the oil burners as soon as I did, was the fact that during the coal situa-

tion the shortage of coal two years ago, the public turned to the oil burning for relief. We were asked by many of our customers then what we knew about oil burners and asking our advice about the many different kinds of oil burners that were being sold in our city.

Our knowledge of oil burners was limited, but I knew that the burning of oil for domestic purposes by the public in general was only a matter



A. De Rosa.

of time, and found, to my surprise, that the beginning of that time in our section of the country had arrived then.

Our city was infected with cheap burners of various kinds, mostly the gravity type. We found that the type of burner was not giving good satisfaction, but the public continued to burn oil through this type of burner as it was the only relief they could get, because of the coal shortage.

We later learned when the coal condition became better that the great majority of the oil burning public still continued to burn oil, and at the same time they were making inquiries as to where they could purchase a better burner, so with this experience I started to inves-

tigate thoroughly the proper method of burning oil, and then I went out into the market to find the proper burner that would burn oil, which I learned was through atomization.

I learned that there were two ways of burning oil; one was by atomization, and the other by vaporization. I learned that burners that burned oil by vaporization were mostly the burners of the gravity type. Because of the construction of those burners, and lack of sufficient air and proper means of atomizing the oil which requires an apparatus containing the necessary mechanical means of producing this effect, the gravity burners had to content themselves with burning light distillate oils by vaporizing methods.

Furnace oil is the trade name for the distillate that is burned in the gravity burners, while fuel oil, which is a heavier oil, cannot be burned satisfactorily in the gravity burners, because of it being too heavy.

I found that the oil burner that would burn oil by atomization was constructed in an entirely different way than the gravity burner, and that the chief difference consisted of an electric motor with fan, which would create forced draft in the combustion chamber, furnishing sufficient quantity of air for proper combustion and proper means of atomizing the oil, which was delivered into the combustion chamber in a mist form. This means of burning oil has been admitted by all heating and oil burner engineers as the proper method of burning oil.

Many of this type of apparatus are more or less elaborate, some having an automatic thermostatic control, while others are hand operated.

When I learned all that I could about oil burners of various kinds through my careful investigating of those that were on the market, I then decided that it was the proper time to get a good burner, and to decide which was the best burner and immediately establish an agency while there was still time to get the best for our trade which was constantly demanding a good burner.

This opportunity presented itself

*Address by A. De Rosa of Angelo De Rosa and Company, Utica, New York, made at the Heating and Piping Contractors' Convention at Atlantic City, May 28, 1924.

last fall, just at a time when, perhaps, it was very inappropriate, because of the rush that is consistent with the heating business. I decided right there and then to make proper negotiations with the factory manufacturing what I believe is the best domestic oil burner and place it on the market when no other heating contractor would listen to oil burners under any condition.

We put on an extensive advertising campaign, and we sold a great many of the burners to the people in our city while many of them had coal bins filled with coal.

Perhaps some of you know we won the national prize for selling the most oil burners during the holiday sales contest last year. Last month, during April, we made another remarkable showing. We sold thirty-three oil burners in our city, forty-two in our territory, which is small, just a few suburban towns. We sold during that month oil burning equipments aggregating about \$30,000. This month of May is showing up well. There will be from \$150,000 to \$200,000 worth of oil burning equipment sold in the city of Utica, New York, this year, and more than 1,000,000 gallons of fuel oil will be consumed during next winter.

I mention this to demonstrate to you the importance to you in taking on the oil burner. I am told by some oil burning manufacturers that the heating men are slow, very slow in taking on oil burners. I know that is characteristic of the heating men, because they have been slow in many things. Some of them are in the rut, and it seems to me they always will remain in a rut and will never get out of it. I know of several instances in cities of the West where opportunities to sell good oil burners were placed in the hands of good responsible heating men, but they ignored and absolutely refused to have anything to do with it. Some of them wanted to know more about oil burners before risking their reputation to sell them, but still they won't try to investigate the possibilities of burning oil, and try to

find out what burners to sell that would be satisfactory.

In many cities they are letting the electrical contractors or the hardware dealer or some "fly by night" concern take on the selling of oil burners, especially the best ones and those which have proved satisfactory, because the manufacturers are determined to have representation in those cities, and are willing to give the heating contractor the first opportunity.

I want to tell you, gentlemen, now is the proper time to place before the public in your city the best oil burner you can get. They are demanding the best and they are looking to you as a heating expert for the best burner, and your advice.

You have the opportunity of reaping a harvest in the sales of oil burners, and reaping good profits. You will get the cream now, and reap the big profits that are possible before competition removes the cream, but be careful which kind of a burner you adopt.

If you adopt and sell the proper kind you will build a greater reputation for yourself.

To talk about the burner question would take all of the afternoon, but I want to emphasize a few facts from my experience.

Keep away from all gravity burners! And from burners that will burn only furnace or distillate oils.

Most of us have enough trouble now, without looking for further trouble.

Sell only burners that burn oil by atomization and burners that will burn the heavier oils known as fuel oil. Just as Mr. Ballard said in his speech this morning. Everything Mr. Ballard said was true, but his talk covered in general the high pressure burners, such as is used in large buildings and manufacturing plants. I am talking from the standpoint of domestic burners for home heating, apartment houses, churches, hotels, garages, etc.

Choose an oil burner that will burn fuel oil which is cheaper and has a greater heat value than the furnace oil, but all good fuel oil burners can burn the furnace oil

or lighter distillates just the same if necessary.

Fuel oil is about the last byproduct of the crude oil. It is a residue and easy to be had.

Out of the great number of oil burners manufactured those that are considered good can be counted on one hand, so you must be careful in choosing a good burner, and when you are absolutely satisfied that you have the proper burner the next best thing for you to do, if you wish to make it a success, is to train your men.

The ordinary men know nothing about oil burners, so you must train your sales force and your men to properly install the burner. If the burner is installed properly you may never have any trouble with it, but you will have much trouble and many service calls unless you are careful in the installations.

There are some oil burner manufacturers, one that I know of particularly, who maintain a school where their agencies are requested to send representatives for at least a four-week educational course on oil burners.

They are put through every stage of the game. They spend a week in the factory assembling and helping to manufacture the burners and testing them. The course is very complete so that when they are through, they return home an expert, and having learned more about oil burners and oil burning in a few weeks time than what they would gain in years otherwise.

The manufacturers maintain able instructors. Men who are expert engineers in the oil burner industry, and the importance of how to sell and how to properly install the oil burner is the knowledge the representatives have thoroughly gained, together with other things of importance through their attendance at this school.

The most important thing of all, after you have made the installation, is the "servicing" of the burner. There isn't a burner on the market sold today that will require no service. You must be prepared to give the customer your best attention,

and prompt service when they call for it, hence, the importance of proper installation, thus insuring less service calls and better satisfaction.

I have installed many burners where we have received no service calls during last winter, but our service men made monthly inspections and any adjustments then made eliminated many possible service calls later.

The best burner is no good if it does not work, and if you don't give proper service it becomes absolutely useless to the customer.

Gentlemen, I tell you that from the experience I have had, the good oil burner has anything we have ever seen as heating contractors stopped, in the way of making profits, and if you are going to let this important question or business get away from you, you will be sorry.

Bonbrake's Retrospection and Introspection of Warm Air Furnace Industry.

*Shows Early Day Usage of Pipeless Furnace—Thinks Some Articles on Subject of Warm Air Heating Too Technical.**

NUMEROUS makes of pipeless furnaces have come under our observation. While there is no question of the superior qualities of construction and the convenience of devices used in the modern pipeless furnace, yet we cannot see wherein they differ to any great extent from the first crude effort in actual operation and the practical principles.

Even 50 years ago cold air was passed through the floor and eventually reached a double-cased contraption which it entered, was heated, and continued on up through a grating into the house.

Gratings were placed back of the coldest door in the building, usually a north or northwest door, to carry cold air into the cellar, and a diversity of methods used then as now.

With an experience of half a century in practical warm air heating, we have fairly completed a circle in evolution and retroaction in this line of industry. The vital principle at the beginning of the circle then and now was and is to get heat from an arrangement in the cellar that would take cold air from the house, warm it, and return it again without the use of lateral pipes. A plant for heating would have a smoke pipe and none other.

Our first effort in heating a large

building with a pipeless construction was in a church in 1876. Since then we have followed many attempts at improvement, such as double-brick casing, with air space, galvanized iron casing single, double galvanized casing lined with tin, black iron, asbestos, etc.

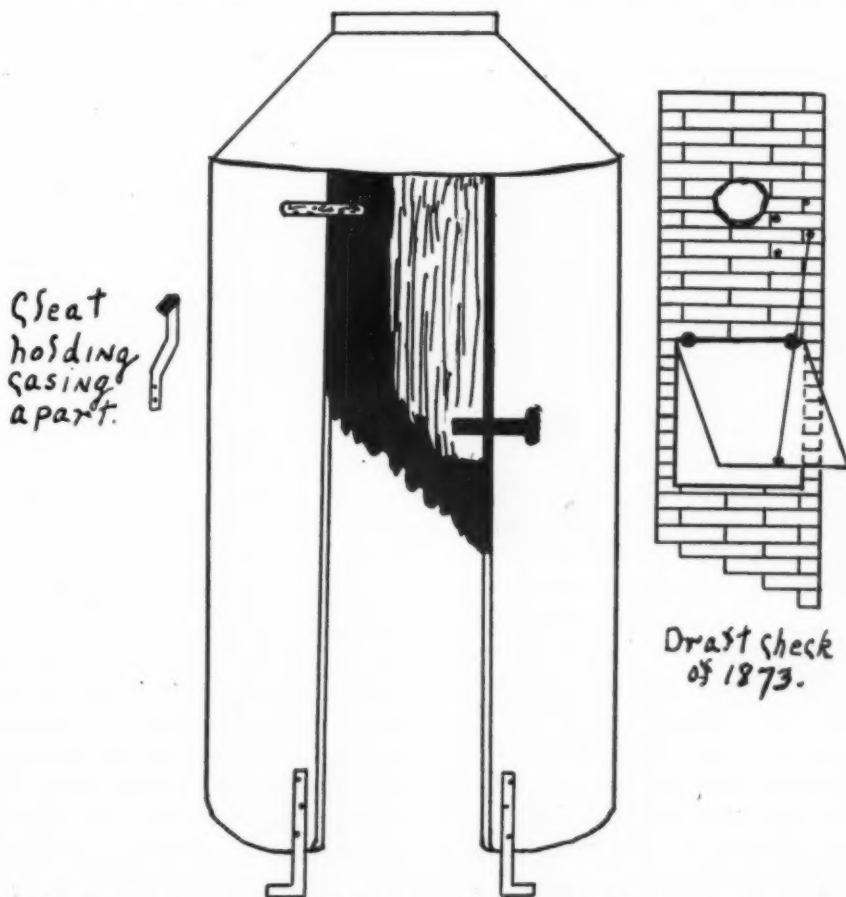
We have taken cold air from the

outside, from the cellar and house, also from the outside and the house combined with wood ducts, the supply regulated by slide dampers.

The church above mentioned, with one center and two side aisles, was heated with two very heavy round cast stoves encased in brick walls, made double with a three-inch air space between the walls.

The register or grating was a common straight bar cast at a local foundry, without boxing or slides; when it got too warm a deacon went around with a hook on a long rod to pull top windows down. The gratings were located midway between the front entrance and the pulpit, at a point where two pews had been left out in each side row of pews, and extended from the side aisle to the wall, which, as near as we can remember, was six or seven feet.

The brick walls enclosing the stoves were drawn in to engage the grating, commencing slightly above the top of the stove; all wood coming in near contact with the grating or stove pipe was lined with zinc for



A furnace double casing of 50 years ago

Written especially for AMERICAN ARTISAN AND HARDWARE RECORD by L. S. Bonbrake, County Hospital, Peoria, Illinois.

fire protection. Each heater was supplied with cold air taken from both the outside and the church by wooden ducts regulated with slide dampers, a double galvanized iron door having a 2-inch space between its sides and of a size to admit the larger casting of the stoves, was hinged to the front of the brick casing. The feed doors were taken from the stoves, holes were drilled in the casting around the opening, and a heavy sheet metal coal chute made and bolted on, extending to the outside of the casing where the stove door was attached to its end.

As a better system for heating was not generally known at that time, this construction and arrangement gave good results (70 degrees through service) for several years, except to parties from the country who were in the habit of rushing up to and hugging a red-hot stove in zero weather.

A few years previous to the date mentioned a few dwellings in south-central Ohio, our neighborhood, were heated by getting a round heating stove of a size thought suitable (all guess work) and double casing it, giving a space of an inch or more, and at times lining around the fire pot and center casting with stove pipe iron or tin hung loose inside the galvanized casing. The casing enclosing the stove was elevated five or six inches from the cellar floor by means of iron standards around and riveted to it. A grating was placed in the floor as heretofore mentioned.

The proposition was to provide for the cold air coming in from under the door to pass down through the grating into the cellar, and enter the furnace casing by way of the elevation provided, be heated by circulating around the hot stove, and pass on up through the floor grating warm. Of course, this elevation gave free access for air from all parts of the cellar.

Times without number in long past years we have tapped first floor ceilings between the joist and when required cut a section out and braced the joist with headers, in order to set an iron grating in the floor above

for the purpose of getting the heat to pass through and warm an upstairs bedroom.

The draft control was given in those days by many furnace men, with an oblong hole made in the chimney having a metal plate to cover it, located under the smoke pipe collar in the chimney. When the plate was drawn up, and the hole fully opened, the draft for the smoke pipe would be cut off dead. Nails were driven into successive courses of seams between the brick above the hole, and a cord or small chain with a ring on its end to slip over one of the nails to regulate the degree of draft.

That convenient little draft check on the under side of the smoke pipe, used now days, takes the place of all this elaboration.

New devices were coming on right along, as improvements in this vocation, until for the past score years all that has been needed to put warm air heating systems away to the fore of any plan yet devised for keeping the temperature in a dwelling or other building comfortable and healthful during the winter season is more care in getting a proportionate balance to sizes and areas, and especially more determination on the part of the mechanic that his execution will be the best in him; that every installation be a special one and not an attempt to get the "durn" thing finished up in a day.

Quires and reams of paper have been covered with information on this subject, many of the articles appearing containing valuable suggestions, yet, after all is written and said, the workman must exercise his own "hard horse sense" to meet the many unusual situations as they arise, or submit his various difficult problems to *AMERICAN ARTISAN AND HARDWARE RECORD*, whose clientele appear not only willing, but take delight in working out a knotty proposition in warm air heating. Submit a full statement giving details as asked for by G. W. Turton on page 15 of the November 10th issue, and you, no doubt, will find immediate succor in your dilemma. More than likely the firm that makes

the furnace you are handling can supply you folders, etc., giving capacities and instruction for installation.

We have followed near the same method of calculation for a quarter century, and have never gone very far wrong as a result in relation to areas of outside walls and windows.

Too many articles are written on furnace installation that go away over the head of the craftsman. We as a rule are only high school graduates, not carrying a college diploma, hence "heat units," "B. t. u.," etc., etc., usually means nil to us and is confusing. We know articles of that character are given little attention by the actual workman.

Let a letter appear in the *AMERICAN ARTISAN* from one craftsman to another in the trade, and it is grasped at once and devoured with avidity. Good ideas and sound advice can be had from the folders and especially from reading all the letters from practical mechanics appearing in the *AMERICAN ARTISAN* from time to time, as noted.

If carefully read and thoroughly digested, the gold in them will remain with you during your lifetime.

Oil Burner Manufacturers Will Hold Quarterly Meeting July 8, at Chicago.

The quarterly meeting of the Directors of the American Association of Oil Burner Manufacturers will be held July 8th, 10 a. m., at the Congress Hotel, according to a letter received from Secretary Leod D. Becker.

Among the matters to be discussed will be the selection of a convention city and the dates for the 1925 annual meeting.

Edward P. Bailey, National Oil Burner Company, Philadelphia, President of the Association, will preside at the meeting in Chicago.

A merchant may have been in business in his present location many years and yet be mistaken in thinking that everyone within trading distance knows about his store and the stock carried.

R. B. Monfort Instructs Installers on How to Meet Varying Demands of Customer.

Sets Forth Possible Complaints and Answers in Clear and Simple Language.

TO MANY installers, perhaps, excessive questioning on the part of the customer may catch him unawares. This is exceedingly embarrassing at a time when embarrassment is apt to cost money in lost sales.

Anticipating these possibilities, R. B. Monfort, general manager of the Farquhar Furnace Company, Wilmington, Ohio, writing in the *FarQuar Firebox*, "wherein facts are used as fuel, that a better understanding may be had of the truth about heating and ventilating," instructs the installer what to look for as follows:

A Complaint and the Answer.

"An Ohio business man recently state that, although his heating plant was comparatively new, it cost him nearly as much to clean the walls and draperies in his home last spring as he had paid for his winter's fuel.

"You will hear many folks making this and other complaints, seldom realizing the connection between the cause of their trouble and the frequent illness which invades their household. Such complaints are usually varied and cover a wide range of subjects, but they can all be effectively answered with a FarQuar fact or feature that will overcome the trouble.

"If your prospect wants fuel economy, stress the large grate area, slow combustion and automatic control features of the FarQuar.

"If it's uniform heat he wants, explain how this automatic control, in conjunction with the vent and return system, keeps every corner of every room at the desired even temperature.

"If it's clean heat he wants, explain the FarQuar 1-piece, electrically welded fire-box which positively prevents the escape of gases and fire poisons.

"If he wants more heat, show him how it can be got from the same

quantity of fuel through the elliptically shaped fire-box with its multiplied heating surface and absence of 'pockets.'

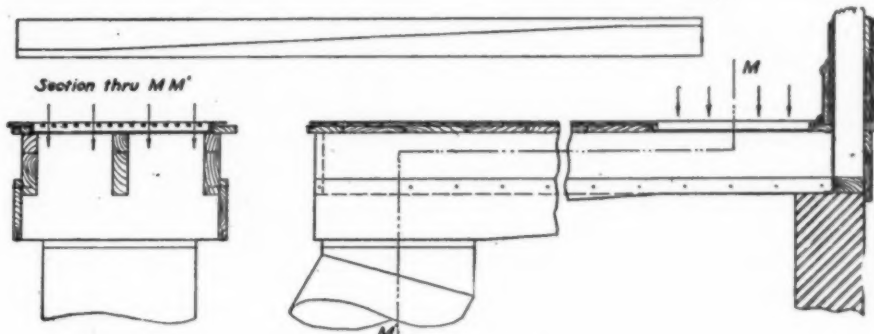
"If it's invigorating heat he desires, show him how the FarQuar vent and return system removes the devitalized air, replacing it with gently warmed, pure, fresh air.

"Clean heat is important, but healthful heat is vitally essential.

"And one thing more: When possible, tell the story in the presence of the lady of the house, for in most cases, the man buys the heating plant his wife prefers because she has to live with it the most."

Here Is a Good Way of Boxing a Joist.

In the June issue of the *"Gas Draft,"* which is published by the Meyer Furnace Company, there appears an article without heading which tells about the boxing of a



How to Box a Joist.

joist, from which we quote the following:

Heating men of experience agree that on the majority of trouble jobs coming to their attention, the difficulty is more generally found in the return, or cold air supply than in the warm air piping on the job, and since this is the situation, perhaps a few remarks and suggestions along this line will not be amiss.

"Boxing joists" has come to be a very common practice, used by furnace installers wherever they

have opportunity, because this method is both economical and convenient, and ordinarily proves efficient, and equal to any other type of return air duct. However, too often the installer fails to take into consideration the excessive friction in this type of duct, caused by the cross bracing between joists and the fact that usually the air must travel on a perfect level for a considerable distance. It is also often found difficult to provide the necessary amount of space unless an exceptionally wide space on the basement ceiling is used. It would seem common logic, also, to assume that if a warm air pipe should have a certain "pitch" to make it efficient, then it is equally good heating practice to "slope" the return air ducts.

Utilizing the joist space is by no means discouraged. Quite to the contrary, it is encouraged, and the method herewith illustrated shows a very simple way of overcoming the principal objection, by eliminating friction, furnishing the desired "slope" and at the same time increasing the free air area to the required amount. A 1" x 10", ripped, and the pieces nailed to the joists

as shown in the illustration, serves the purpose, and is the only additional material required, but this practice will unquestionably increase efficiency in circulation.

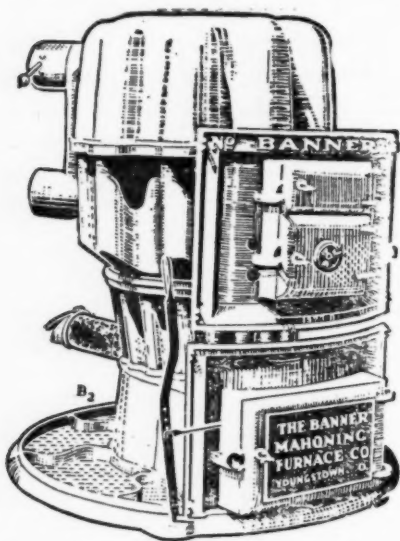
It is also very important, and should be borne in mind, that unless the iron is nailed very closely, the "box" should be sealed with asbestos paper and paste, or otherwise made tight, to prevent possible dust leakage from the basement.

Power abused is soon lost.

Banner Furnace Has New Feature in Indirect Diving Flue.

A new feature in the form of an indirect diving flue has been included in the equipment of the Series 1923-D Banner furnace, manufactured by the Banner Mahoning Furnace Company, Youngstown, Ohio.

This series of furnace is the one popularly known as the furnace that heats an entire city, 300 of them



Completed Banner Furnace Without Casing.

having been installed in the city of MacDonald, Ohio, at one time.

Other features of the Banner furnace are the self cleaning slotted fire pot, the extra heavy radiator and the special dust flue.

The company also manufactures two other types, the Mahoning and the Wright.

Learning the Psychological Moment to Close the Sale.

There is a psychological time to close every sale, whether it is large or small. To attempt to do this too soon is to arouse the suspicion of crowding, or of undue anxiety. Sales resistance springs and the good work done before is likely to be upset, says D. O. Morley.

On the other hand, to delay the close of the sale too long is to run the risk of reaction which customers so often experience, as to whether

or not this, after all, is the best buy and the accepted time to make the final decision. How, then, are we to know when the moment has arrived?

One keen student of men declares that he seldom is in error if he observes the changes in the eye of the prospect—that in his experience the pupil of the eye dilates when the customer is free from prejudice and objections, and is a little excited or stirred with interest and ready to go forward and close the matter up. On the other hand, this observer tells us that withdrawal, objections and failure to be convinced are usually shown by a contraction of the pupil of the eye. This calls for a mental record on the part of the salesman as to the appearance of the eye upon the approach of the prospect. And it may be the reason why the salesman is always reminded to look the man he is doing business with in the eye, on the level. It may account, in a measure, also, for our suspicion of the shifty-eyed person.

A frank statement that the salesman desires the customer to be thoroughly satisfied, and to look around if he cares to make comparisons, nearly always has the opposite effect. The prospect reasons that the salesman must feel pretty certain of his ground to be willing to make this offer. Then many people actually have a little difficulty in coming to a decision. They have been brought up in the notion that someone else must cast the deciding vote, and they wait for the deciding factor, whatever that may be.

A telling argument, held in reserve for this very moment, a further reminder as to quality, or some little inconsequential concession will often prove the weight which will bring the scales down on the sales side. Or all that may be necessary is a polite inquiry as to which of the two apparently favored selections finally will be chosen.

As the sale nears its close it is the part of good judgment to narrow the selection down to as small terms as possible. It will often be noticeable that the prospect who is apparently sold will take a sudden turn

and, as it were, begin all over again, going back to the starting point.

Avoid the slightest sign of impatience in manner or tone, and repeat the original sales facts already used, also bring out another and, if possible, stronger one, and then lead the prospect swiftly back to the point of closing. This reverting to the point of beginning is a primitive but basic tendency of the human race. Story tellers and theatre producers understand it, and have the final scene array side by side and account for all the characters. They plan the last scene to link in a satisfying manner into the opening one.

When the sale is closed, be careful to treat the customer as it is evident he wants to be treated. Do not drop him unceremoniously. The impression left is bad. Taper the conversation off tactfully and lead away from any doubtful topic.

J. B. Van Velkinburgh Would Not Be Without AMERICAN ARTISAN.

Out from the west come these kind words from J. B. Van Velkinburgh, proprietor of the Pearl Furnace Company:

TO AMERICAN ARTISAN:

We would not be without AMERICAN ARTISAN for anything. It's certainly great.

J. B. VAN VELKINBURGH.
Lincoln, Nebraska.

When It Would Be Useless to Advertise.

If folks didn't die, if people didn't move, if new generations didn't grow up, if customs and habits didn't change, if competitors didn't compete, and if people were not open to suggestions and receptive to new ideas, there would be no need of advertising and when a business was once built up it would stay put.

Every day the king dies and every day they inaugurate a new king who must be told of your products. Don't forget that every day the king dies.

If you stand still, by and by you will be removed.

This Is How the Sheet Metal Men Enjoyed Themselves in Washington.

There Was Just the Right Mixture of Business and Fun to Make Convention Program Right.

THE twentieth annual convention of the National Association of Sheet Metal Contractors will be remembered by those who attended as one of the best meetings in the history of the association — both from the standpoint of the business sessions and from that of the manner in which the entertainment was planned and carried out.

The report of the business sessions was given in our issue of June 21st, but while mention was also made of the entertainment features it seems only fair that a more extended account should be given here of the trip to Mount Vernon and of the banquet, both of which took place on Thursday, June 19th.

Promptly at noon the delegates, guests and ladies were conducted by Paul F. Brandstedt to the Executive Mansion, where they had the honor of shaking hands with President Coolidge, who, by the way, looked tired and worn. He has had a tough proposition on his hands during the past session of Congress and shows the effect.

Leaving the White House we boarded interurban cars for Mount Vernon, the home of our first President. At the grave Ernest Gichner, one of the Washington sheet metal contractors, delivered an eloquent oration in a manner which was familiar to his colleagues in the Capital City, but which certainly was a pleasant surprise to those who did not know him. Mr. Gichner also placed a beautiful wreath on the grave on behalf of the National Association.

About three hours were spent on the spacious lawns of Mount Vernon and in the house. Groups were formed. Snapshots were taken. Some of these are reproduced on the center double page of this issue.

At four thirty the steamer was at the landing, and we had a pleasant boat ride up the Potomac River, arriving at the Raleigh Hotel in plenty of time to cool off and clean up for the feature of the entertainment—the banquet.

And believe me, it was some banquet!

Paul Brandstedt was toastmaster; Ernest Gichner and Max Walten "performed"; the "audience" sang; the orchestra discoursed fine music; the orators orated; the food was excellent; there was plenty of ice wa-



Arch at Entrance to Convention Hall.
Made of Sheet Metal by Students
in Trade School Conducted by
Washington Sheet Metal
Contractors.

ter (Washington is officially dry, you know)—so how could the affair be anything but a splendid success?

It was—and we are certainly glad to give heaping-full measure of credit and praise to every one who helped to make this banquet such a thoroughly enjoyable occasion.

Probably the thing that struck most of us with the greatest force was the address delivered by Homer J. Councilor, who had for his subject, "Happiness."

Mr. Councilor was seriously injured some years ago and still bears the marks of the accident; and still he chose "Happiness" for his theme. If he, in his physical condition, can

speak of "Happiness" without bitterness, what reason can any man who is in good health and full possession of all the physical strength that the Almighty may have given him complain?

The three key words of his address were: "Work," "Share" and "Serve." No man can be truly happy unless he works. No man can enjoy happiness alone. No man can attain the full measure of happiness unless he serves others by his work.

His address was an inspiration, and especially fitting as the closing number of a program of highly enjoyable features.

Every guest at the banquet was the recipient of several useful and attractive souvenirs.

From the Tee-and-Bee register folks there was a handsome brush, which "Trow" Warner said could be used equally well for the hair, the suit and the shoes.

Kant-Break Ladders, Incorporated, knew that keys are necessary even where their ladders are not available, so Mr. Schwartz very thoughtfully provided a handy key holder in leather folder.

"Men are just as vain as we say the women are," said B. J. Jacobs, "but we are not going to encourage them," so he presented every lady at the banquet with a beautiful little mirror on behalf of the National Tinnners' Red people.

The Osborn people, as usual, had something useful. This time it was a refillable note book of good size and with a handsome Morocco cover.

Several hundred pounds of copper sheets were distributed by the Baltimore Copper Smelting and Rolling Company, bearing on one side a table of all the sizes, weights and kinds of copper sheeting made by the company.

The Niagara Tool folks sort of made up for the mirrors that the men did not get, by giving them handy match safes, so that they might enjoy a Camel or Pittsburgh Stogie, to say nothing of the Palinas and Burns that Pop Henninger distributed.

Right at the entrance to the beautiful ball room, in which the sessions and the banquet were held, there was a handsome arch made of galvanized iron by the students in the Washington Sheet Metal Contrac-

tors' Trade School, which, by the way, is conducted in the shop of Ernest Gichner, under the direction of H. R. Dampman. An illustration of this arch is shown herewith.

Warren Carter Discourses on Selling More Sheet Metal and Sheet Metal Products.

Tells Washington Conventionites Salesmanship Is Bringing Product of Maker Into Contact With Consumer.

ADDRESS on "Selling More Sheet Metal and Products or Applied Salesmanship," by Warren Carter, of Carter, Donlevy & Company, Philadelphia, Pennsylvania, at the National Sheet Metal Contractors' Convention, Washington, D. C.:

We must lay emphasis upon the fact that the goods we handle and supply are subject to final fabrication at your hands. This business is not a maker to owner proposition, never was and never will be.

It is a fact, however, that the making of eaves trough, conductor and fittings, furnace pipe and elbows, roll tin has passed into the hands of the distributor largely for the reason that shops are not equipped today to make such material on the extended scale required.

But we must realize that the articles alluded to are only made to assist the trade on the way. The final installation and erection, in any event, is your function.

It is for us as makers, and distributors to supply you as fabricators, and erectors with the ammunition in the shape of *metals*.

For you as fabricators of this metal to shoot this ammunition in finished form to its final resting place and this to be done at a profit to both parties. In so doing you are rendering a distinct service to the property and owner thereof.

Please remember that it is what the owner actually gets for his job in the way of service and utility that determines the value not the price on the bill. The owner always pays.

As I see it, one of the chief ob-

jects of your association is to raise the plane of the sheet metal business to a higher level of usefulness.

To make it a real profession in name as well as in results which have already been achieved.

To have each man get a higher respect for his vocation than has existed in the past—to instill a vision of the future in the minds of your associates.

Salesmanship

The high art of bringing the product of the maker into successful contact with the buyer or user.

Converting a potential or latent value into an active value by placing the idea or the product into service or use.

Germinating a thought so that it becomes a reality rather than a mind picture.

To forget the words: Tinner, roofer, etc., and have the trade known as a craft.

To have each man realize within himself that he is working toward a higher goal.

To raise—not lower—the standard of doing business.

To increase the permanent use of sheet metals: not a spasmodic increase, but a big and lasting one—something that will also be a silent advertisement to those who follow in after years.

Indeed each of us have a most distinct function to perform in the chain of events from the time the raw metals come from the ground until they find lodgment in some

finished form. Our interests are mutual. We depend upon you more than it appears. Were we to supply materials made of precious metals it would be useless if not properly fashioned and installed at your hands.

The proposition for today's consideration, is how to increase and put the sheet metal business further on the map thus getting that other 50 per cent business which you are not now enjoying.

I make the bold assertion that this object can be accomplished through salesmanship on your part. In the past, your profession has been strong in execution—weak in selling. A lot of business has come to you through dumb luck. Now the responsibility for the increased sale of sheet metal work is clearly up to you men of the profession.

Men sell your knowledge and personality to the user of your products. You have a lot of splendid ideas to sell. Get away from this low price proposition—Don't forget you are in one of the most essential and necessary crafts.

If you find yourself tied down to your shop and office today, try and get some one to take your place on the dead work and advance into the producing—the selling end. Be your own salesman. Don't hire some one for this—don't try. Do this part yourself. A little practice will develop your latent powers.

Of course, a man must not lose contact with the mechanical or theoretical end of his business, as therein lie his greatest assets as a salesman of his product.

Think of the opportunity you practical, well trained men have to demonstrate your work to an architect, contractor, builder, property owner, any one interested in sheet metals.

You really have a big advantage in this field over us. We cannot sell beyond your ability to use and only such standard commodities as you can fabricate, whereas a single sheet of copper merely an article of commerce to a distributor may enter into a hundred uses when manipulated at the hands of you practical men.

There are vast untouched opportunities for the use and consumption of sheet metals which I will not attempt to enumerate, except to say that the opportunity is there. You will have to dig into this.

Some sheet metal shops are doing all they can—full of business, unable to get proper mechanics—turning work away. I hear the oft repeated statement—could do more if I could get the help. Well we must train the help and make it attractive for young men to learn the trade that is, if we intend to see our business grow and develop and not stagnate and disintegrate.

I think we are falling down on the job, for the sheet metal business as a whole has not advanced in proportion to the enormous expansion in new construction which has taken place in recent years.

Which comes first? Execution of the job or salesmanship in getting it? The selling force is first as without this there is nothing to execute but the work must sustain its best reputation—must be all that was contemplated and promised when the job was sold.

How do you get your business to-day and how can this be developed through applied Salesmanship?

Legislation: In many municipalities, sheet metals are required by ordinance—fire walls—fire doors—metal garages and buildings—metal cornices, etc.

In other places, fire restrictions are not imposed.

More attention should unquestionably be given by you men to the subject of framing and securing ordinances favorable to the use of sheet metals.

I feel that this is a matter which can be safely and adequately handled by your association. You are the men to sell the idea to the law makers in the various communities, but in any event a strong effort can be made to get metal work adopted in places where there are no restrictions imposed.

Tradition is a fixed asset of good value. It brings some work but does not grow.

New Schools: In some states, notably Pennsylvania, there is now a building Code requiring a certain number of cubic feet of free air per pupil. This type of building calls for considerable sheet metal installation and a large field is opened before you for this work as the demand for new schools of all character in the next few years is going to be enormous.

In localities where such building construction is not required, you men can sell the idea and thus assist the sheet metal business and help in a better form of ventilation.

Alterations: The alteration of old mansions into apartment houses is taking place. If large porches are used, there is a fine field for sheet metal activity.

Metal store fronts in dwellings which in changing neighborhoods are being remodeled into business places, will consume considerable material and offers a chance for some high class work.

You can safely sell these ideas to some of the property owners you know who are carrying top-heavy burdens on their shoulders at the present time in the shape of non-productive real estate. This is good selling.

Example: A good sheet metal job that can be seen is a marvelous business getter but some of the most satisfactory and intricate jobs you do are concealed, so this has only partial value, but pictures of buildings where such work has been done is a fine asset in a selling talk.

The architectural effect of new buildings is not producing 50 percent of the metal work that it should. This line must be attacked with renewed vigor by you and the idea sold.

If prepared to do this class of work there is a fine selling field open in hotel and restaurant equipment—dairy and ice cream supplies. Many of these propositions will respond profitably to some strong individual selling pressure.

Advertising: Cannot at this time depend upon the manufacturer to sell your goods through a campaign of National Advertising. This,

however, is a matter for further consideration.

It is well to note what the Copper & Brass Research Association has done in this respect. The mind of the public has been opened to the advantages of this material and the opportunity for vast uses is now before you. The actual selling and capturing of this work, however, is largely up to your craft.

There is a lot of individual selling work that can be done to profit and advantage. Neat, carefully worded advertisements in local papers, accompanied by electros where possible for the purpose of attracting attention. Such wood cuts are often furnished by the seller.

Small illustrated pamphlets showing the finished product of your shop with a few well chosen pictures. If such are sent to mills, factories, and general contractors, both large and small within your reach may land one job that will pay entire cost of the work.

Hanging up signs on jobs where you are working—calling attention to the fact that metal work is being installed by you.

Extra or prominent listings in telephone directories.

Blotters enclosed in correspondence.

Circulars or postals sent at proper periods (say once or twice yearly) to your patrons and prospects calling attention to various classes of seasonable work.

Propaganda has planted the thought in the minds of a lot of people that service can be obtained on articles entering into building construction without employing a mechanic. For instance, why do not more people ask for a metal roof?

In pushing the articles such as tin roofing and warm air furnaces, which require attention you secure a future hold on the work. For every job of this character which comes to you unsolicited try and sell another by using the job just finished as a selling argument.

Pictures of fires stopped by metal work—a great selling asset.

Why is not more of this done?

By adopting some sort of a card system a record can be kept of tin

roofs applied. This will be a good asset to have in years to come as it will give an opportunity to suggest to the owner that the roof should be examined at stated intervals and painted when necessary.

The same method can be adopted with marked success in the installation of warm air furnaces.

This is good salesmanship—selling the idea to the owner, as in so many instances, notably on a roof, out of sight means out of mind to the detriment of the property.

Very few property owners realize the wonderful advantages of the tin roof nor the quiet dignity which it possesses. Your selling arguments in favor of the metal roof are at your fingers' ends. You surely realize that the service the tin roof is called upon to render is almost beyond comprehension.

Of course, roofing conditions must be studied to see that everything is right for the application of a tin roof as there are places where it is not desirable to install a metal roof.

There is a wave sweeping over the country in favor of better merchandise. Within the last few years all makers have greatly improved the quality and wearing value of roofing plates—also sheets.

High wages make the cost of applying cheap metals nearly as great as the best. If I were selling tin roofing, for instance, I would talk only the best. I would let the buyer raise the question as to whether there was anything cheaper and then have this to fall back upon as a last resort if I could not sell the best.

Sell daylight to factories and homes. This is possible through skylight installation. There is a big field here for constructive salesmanship.

Feature warm air furnaces. This business has been badly injured in past years by improper installation. Study conditions and see that the furnaces are set properly. You and I know the great value of a warm air furnace, but this idea has got to be sold again to the property owner. Give a liberal guarantee on furnace

work. You are safe if you know your product and conditions.

How about metal cornices so prominent in years gone by? There are just as many fires as of old. This should be looked up and pushed to the front.

Have your trucks painted and lettered prominently. Use attractive stationery. These things help to raise the estimate of your craft in the minds of people and show who you are. This is silent selling.

Adopt a slogan by which you can be recognized. In the case of new men starting with prior experience, something like this:

"New Name. Old Dependability." and:

"Expert Sheet Metal Workers. If Made of Sheet Metal, We Produce It."

"Tin Roofing That Keeps the Roof Tight and Lasts Indefinitely."

"Hot Air Furnaces That Heat."

"Bring Your Heating Troubles to US to Be Rectified."

In selling sheet metal work it is well to always make your prospect feel that *you* know more about the job than he does. Study the elemental facts surrounding the case—the ends to be obtained so that you will be in a position to tell an interested patron not only what he ought to know but would like to hear. This confidence on your part, if real, will inspire confidence in him.

How many times has good salesmanship on your part turned an apparently ruinous job—one on which a loss was being faced—into a really profitable transaction?

Start to sell *now*; don't wait. Many people hold off on work for a lower price or lower wages which never come. One item may recede and the other advance. Numerous jobs are lost forever by failure to drive home the knowledge that now is the time to do it.

Apply intensive arguments as known to you to close the job that is presented rather than have it a contingent liability upon your time and energy.

Cultivate the acquaintance of architects, builders, insurance men, owners, those who have the say.

Let them realize how much there is in sheet metal work and how much service it will render. Let your enthusiasm spill over on others. Get a representative job in a community and you will find that others follow suit. This is real salesmanship. It puts it right up to you.

In asking yourself the following questions as to why your business cannot be increased, see if a satisfactory answer cannot be had to each:

Is it shortage of help? Lack of legislation compelling metals?

High price of work as compared to other types?

Lack of opportunity? No metal work in your vicinity in recent years?

Change in construction? Aversion to metal work that has to be painted? etc., etc.

All of these objections and a hundred others can be snuffed out and bowled over by a little dynamic selling force. Remember, men, it is not the orders which come easy which make us strong or good salesmen—it is the business we get by overcoming obstacles that gives us the confidence and rigidity of character that allows us to move forward to larger fields of usefulness.

In the final analysis, we can arrive at one conclusion, viz.: this business cannot depend for its development upon the *traditions of the past, legislation, nor national advertising.*

It has got to be expanded through force—intensive selling force dispensed by you men, backed, of course, by such assistance as manufacturer and distributor can render.

Arguments such as shortage of mechanics, high prices of material and work, changes in construction, lack of opportunity, and hundreds of other excuses must be combated by greater determination to do more than in the past.

Men, do you love your work? Is your heart and soul in it?

Are you sold 100 per cent to the idea you are in the best business there is?

If so, nothing can stop you from forging ahead.

Iowa Sheet Metal Men Preparing for Rousing Good Time at Outing July 12 and 13.

Waterloo Will Be the Center of the Onslaught of Invading Iowan Hordes—Everybody Invited.

A GAIN as the warmer days begin to set in upon us, we turn our thoughts to picnics and the great outdoors, and think of the great times which we have had together at the Iowa Sheet Metal Contractors' Annual Outing in the past years.

These visions, however, are of the past, so let us turn our thoughts to the future, and imagine ourselves in the fair city of Waterloo on July 12th and 13th. What are they planning to do with us? Well, so far it is pretty much of a secret, but, of course, there is always some information which will continue to leak out, so we are passing along to you just what we know ourselves. Although the information which we are about to give you is not official as yet, it will give you a rough outline of the program of events, which the Waterloo bunch has in store.

In the first place there will, of course, be registration and reception at some local point. After registering and getting acquainted with your long lost friends it is the intention to journey out to the Electric Park, where there will be amusements for both granddad and the children, and, oh, yes, we have heard that the children will be given about six free tickets which will take them around the world and back on any of the amusements in the park. So be sure and bring the family.

At noon there will be a picnic dinner, after which will come games and athletic stunts for everybody. What did you say? "Are we going to have races?" Well, from past experiences we know that to one person the outing would not be a success unless we had the Pipe Race, so you may bank on one race at least. Prizes will be awarded to the winners of these different events.

Saturday evening will be the banquet and program, and from what we know of Waterloo's talent the

evening will be well spent.

All those without headaches Sunday morning will be driven down to Elk Run for breakfast and a real good social time afterwards. Inasmuch as there are quite a number of the members who will undoubtedly want to start back home right after lunch, the afternoon will be left open.

The invitation from the Waterloo association is as follows:

We want you to be our guests on July 12th and 13th at the annual outing of the Sheet Metal Contractors' and the Jobbers' and Sales-

PUBLICITY, to be really effective, must be continuous, sustained, day in and day out.

Acquiring the good will of the public is like establishing a man's character; it is not built up by spasmodic efforts, nor based upon exceptional acts, but by the steady, persistent, intelligently directed campaign.

men's Auxiliary of Iowa at Waterloo.

Bring your wife and all the kiddies, large and small. If you have no wife, bring your sweetheart, but come whether or not you are a member of the Iowa association or the auxiliary. Your presence is desired and we will show you a fine time.

All entertainment will be strictly informal. Our whole organization has made plans on all members of your company coming and we guarantee you will enjoy yourselves.

Write F. J. Hacker, 809 East Fourth Street, for room reservations, and tell him how many there will be in your party. Register at the Russell-Lamson Hotel until 11:30 a. m. Saturday, after 11:30 at Electric Park.

You will be given a picnic dinner Saturday noon. Also games, sports, athletic contests, rides on the roller coaster, ferris wheel, aero-

plane swing, barrel of fun, and finish that day at the Russell-Lamson Hotel with a big banquet—toasts, vaudeville stunts and dancing. If you are able Sunday morning, you will take a ride about Waterloo and Cedar Falls visiting the State Teachers' College grounds and the bathing beach. All of this will happen, rain or shine, so don't stay away if you see a little cloud.

We are all looking for you.

B. F. LICHTY,
President.

E. L. MOORE,
Secretary.

N. A. LICHTY,
Picnic Chairman.

Berger Manufacturing Company Has Fine Warehouses and Factory in Minneapolis.

The new warehouses, office and factory of the northwest branch of the Berger Manufacturing Company have recently been completed and occupied. They are located at 1701 Broadway, N. E., Minneapolis, Minnesota.

In the big warehouses a goodly supply of Berloy products is on hand at all times ready to fill orders promptly. These products include steel and Toncan metal sheets, trough and pipe, roofing, siding, ridge roll, metal ceilings, metal lath, ribplex, floor cores, filing cases, lockers, shelving and other products in the Berloy line.

In the factory Toncan metal sheets are made into corrugated culverts as this branch does a large culvert business.

The branch is under the management of "Billy" Myers and Frank Gerold with an efficient corps of workers. Minneapolis is one of the twelve branch offices which are helping to keep the Berger division of the United Alloy Steel Company busy.

The biggest successes in business come to the men who plan ahead and get their future actions mapped out in advance. The failures come to the men who never think beyond today.

Threshing Machine Grain Sacking Chutes and Spouts Are Continually Needing Repairs.

O. W. Kothe Says Home Sheet Metal Shop Owners Are Not on the Job to Get This Work.

Written Especially for AMERICAN ARTISAN by O. W. Kothe, Principal, St. Louis Technical Institute, St. Louis, Missouri.

SOME of the connections used for sacking grain on threshing machines are shown similar to the illustration shown. Some of these are just near half round spouts and even at that they become bruised, and by the continual flow of grain the metal soon wears through, pro-

vided a wagon does not back into it and stave it in before it wears out.

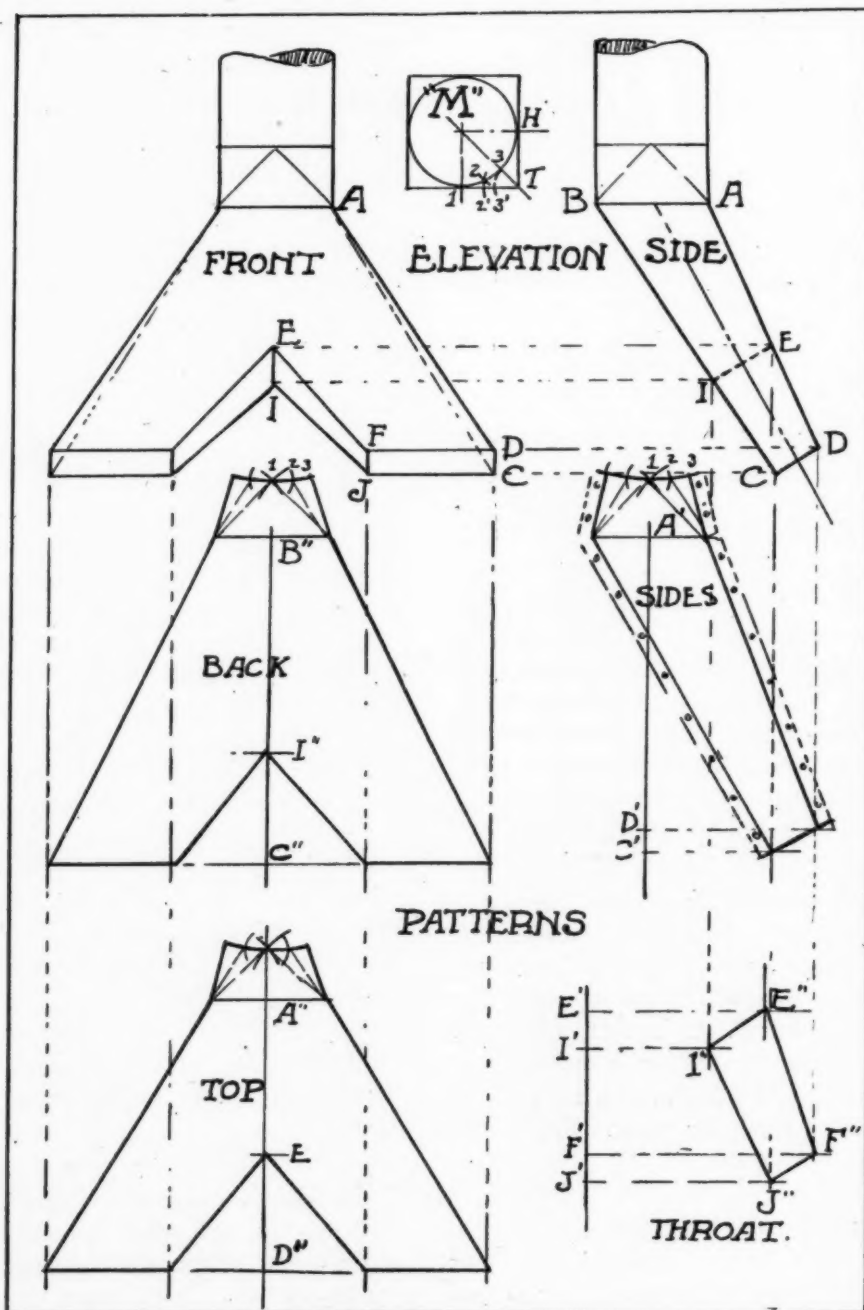
The same holds true with grain elevator chutes and connections or spouts. These, too, are often seen laying at railway stations along the route of travel or when most any common tin shop should be qualified

to make them.

It is amazing to observe the vast amount of agricultural sheet metal work that is put off at the depot in one town or another, and it all shows that the home shops are not on the job. The city shops know how to go after the work, and if certain avenues are closed to them, they know how to develop other avenues, while the country town shop has only his immediate vicinity to draw on, and if he lets that go through his fingers, it does not speak well of his boasting as being a business manager.

There are quite a number of employers who will tell you that they cannot take on much of that work because their mechanics do not know how to make the repairs. In that way they limit their business by the incompetence of their workers, which is not exactly good business. Every sheet metal shop should make it a point to be resourceful and learn more than one, two or three ways of doing things, so that if one of his men shows too much of a deficiency in mechanical ability there are always others willing to learn to do better work, and they can be easily had. Shops that feel that they must pay their men a few dollars more a week, that is out of the question—but still they will let often fifty to a hundred dollars worth of work slip through their hands every week, as their minds are not developed big enough to know how to work the several combinations for the greatest profit.

Now, when branches of this kind become damaged they can be easily made over by simply taking the old one to pieces and making the new one after the pattern of the old one. Of if parts are lost, then they can be laid out similar to the enclosed problem. We first draw the side ele-



Patterns for Grain Spout Branch.

vation, making the center line to the angle the spout is to incline, and also giving the depth as A-B the length it requires. Then add the heel line D-C and from these points bring over horizontal lines and construct the front elevation, making the throat E-I in the position required and drawing the lines as shown; taking care to hold what measurements you have. Next from points E and I of front elevation project over lines to the side elevation as E-I which gives those points and shows the throat line in the side elevation.

To set out the pattern for the sides we pick the line A-D and A-C from front elevation and set them below the side elevation as A'-D'-C'. Then we draw horizontal lines through these points and from each point in elevation, as A-B, also C and D, we drop lines to intersect those in our stretchout of similar number. This enables us to draw the outline of pattern as shown. To set out the front and back elevation we draw a straight line below the front elevation and pick the line B-I-C from side elevation and set it as B''-I''-C''. Then we pick the side line A-E-C of side elevation and set it as A''-E''-D''. Through these points we draw horizontal lines and from each point in the front elevation we drop lines to intersect these in stretchout of similar number. At the intersections we draw lines and this gives us the pattern for the front and back as shown.

To set out the throat pattern, pick the distance E-F and I-J from front elevation and set as E'-F', also I'-J' and then project over lines and from each point in side elevation as I-E-D-C drops lines to intersect those in stretchout as at E''-I''-F''-J''. This enables drawing the outline of pattern. Attention is called that lines E''-F'' of throat must correspond to the throat line in pattern for top, while the line I''-J'' must correspond in length to the throat line in pattern for back. When these do that you are certain your layout is correct. The rise E'-I' is made in relation to that

of front elevation as E-I, so as to give the correct tilt between these lines.

A square to round connection is added to the top of these patterns and can be got out similar as "M" which shows the sides of the pipe as well as the branch, where H-T is the height of transition. The distance 1-3 is divided in equal parts and from T we sweep the points to the base line as 2'-3'. Then imaginary lines to H will be the true lengths. With these we develop the quarter pattern on each pattern shown below so that these parts can be made in one piece. This treatment is the same as all the other square to round we have had in past issues, and so further comment is not necessary.

Frank Mellish, Long Prominent in Chicago Sheet Metal Trade, Died Suddenly June 22nd.

The many friends of Frank Mellish, president of the Mellish-Hayward Company, will regret to learn that he died suddenly on Sunday, June 22nd, at his residence, 3327 Home Avenue, Berwyn, one of the southwestern suburbs of Chicago.



Frank Mellish.

Mr. Mellish had been confined to his bed with an attack of ptomaine poisoning. In attempting to rise he fell out of bed, and this brought on a cerebral hemorrhage, which was the direct cause of his death.

Born in London, England, in 1863, he emigrated to Canada in 1870, but came to Chicago in 1884, when he was employed by J. H. Manny, grandfather of J. Harvey Manny, and at that time manager of the Chicago branch of Boynton Furnace Company. For several years he was superintendent of the erection department of that company.

In 1895 Mr. Mellish went into business for himself operating a general sheet metal shop and specializing in warm air heating and ventilating installations. Many of the largest ventilating jobs in Chicago have been executed by him.

He was always active in the work to build up the sheet metal contracting trade and had been a director in both organizations of the sheet metal men of Chicago. In public affairs he also took much interest, having served for three terms as an alderman in his home town of Berwyn.

Mr. Mellish was a thirty-second degree Mason and was secretary of the Chicago Motor Club.

The funeral, which was attended by a large number of his friends and business associates, took place Wednesday, June 25, at 1:30 p. m., from his late residence, with interment in Mount Hope Cemetery.

Pexto Plant at Southington, Connecticut, Is Being Enlarged.

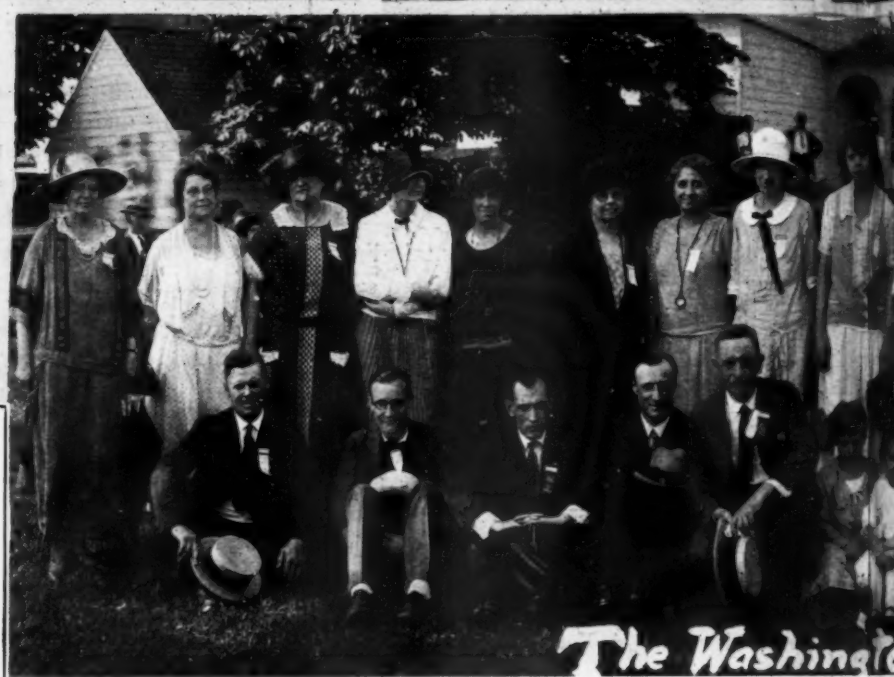
The Southington, Connecticut, plant of Peck, Stow & Wilcox Company, makers of "Pexto" tools for sheet metal workers and other mechanics, is being enlarged by the addition of a new building to house the grinding department.

Rudolph Greve Company, Kiel, Wisconsin, Is in Market for Sheet Metal Machinery.

Rudolph Greve Company, Kiel, Wisconsin, a sheet metal contracting concern, is in the market for a considerable quantity of sheet metal working machinery.

Aim above morality. Be not simply good; be good for something.

Among Those Who Attended National S



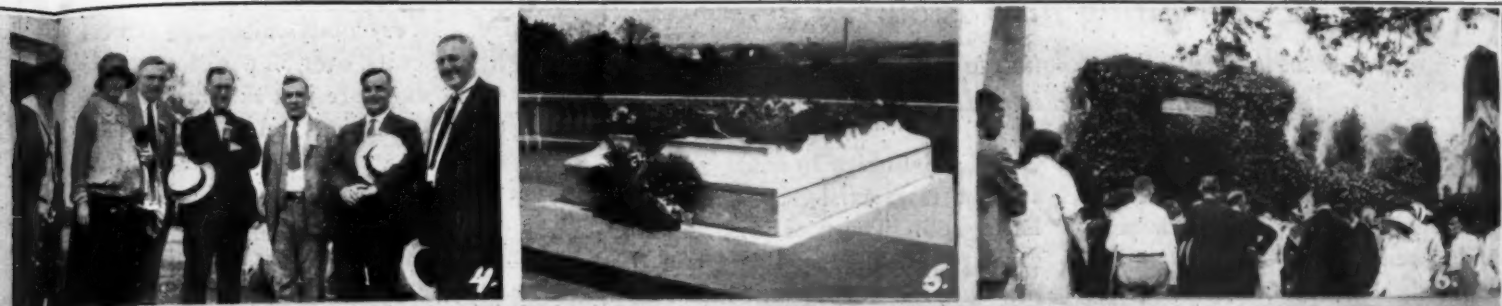
(1) Red Devil Langenberg, Bill Fingles, Kid Danzer. (2) Louis Luckhardt, Joe Urban, Bill Markle. (3) A Bunch of Clevelanders; George Thesmacher, Miss Kelly, Tony Howe, Mrs. Howe, "Pop" Henninger, "Charcoal" Palmer. (4) Miss Etta Cohn, Mr. and Mrs. F. G. Sedgwick, Joe Habig, Charlie Fink, P. E. Sullivan, A. G. Pedersen. (5) Tomb of the Unknown Soldier, Arlington National Cemetery.

The Washington



20th ANNUAL CONVENTION, NATIONAL ASSOCIATION OF SHEET METAL CONTRACTORS
ON VISIT TO ARMY VETERANS' HOME

Sheet Metal Convention In Washington



(6) Some of the Audience Listening to Ernest Gichner's Oration at Washington's Tomb. (7) Bill Angermeyer and Secretary Seabrook. (8) Another View of the Tomb. (9) The Three Troubadours, W. J. MacLean, E. T. McNulty, J. J. McGeady. (10) No, It Is Not a Crap Game, See (9), (11), Bill Laffin, Frank Eynatten. (12) Quarter of a Dozen American Artisan Folks, Bill White, of the Great White Way, on the Right.



Frank Harrison Wants to Know How Many Feet of Gutter an Average Mechanic Can Hang in 8 Hours.

He Also Submits a Solution to Harry Frye's Tank Problem, But Believes It Impractical.

HERE are a few problems that will keep readers of AMERICAN ARTISAN busy with their pens and pencils.

Frank Harrison, Kenilworth, Illinois, has hit upon an idea wherein all readers of AMERICAN ARTISAN can both participate and profit. So, after you have read his letter through, sit down and give your own ideas and outlet through your pen point. Mr. Harrison's letter follows:

TO AMERICAN ARTISAN:

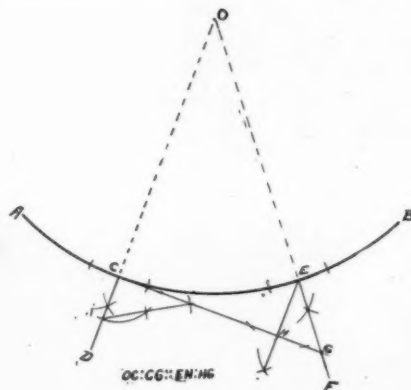
I have been a subscriber to AMERICAN ARTISAN for over ten years, but have never tried to burst into print through your columns. Now I feel impelled to do so, anent Mr. Frye's tank problem. His problem can be solved geometrically through the simple little theorem, "In similar triangles, corresponding sides are proportional." But he is not going to get me down in that small restricted area with a zig-zag rule and thirty feet or even 300 feet of stretchy string trying to make practical application of the method. The implements to freedom with which Mr. Frye equips his prisoner, not nearly so practical in this case, are, nevertheless, similar to the black-board implements to passing grades with which his geometry teacher equipped him in school days, probably. My method follows, submitted more with a challenge to Mr. Frye to go in better in practicability than as a real means of extricating the man:

Let AB be the portion of one circumference available to the man to work upon. It is possible to construct radial extensions CD and EF and the tangent CG. From point E drop a perpendicular to the tangent, as at H. Imagine FE and DC extended within the tank and if the drawing is accurate, they will intersect at O, the center. Then trian-

gle OCG is similar to triangle EHG and the ratio exists, $OC : CG :: EH : HG$. The poor prisoner can measure CG, EH and HG and if the strain has not caused him to forget his eighth grade arithmetic, solve the proportion on the side of the tank giving him the required radius. Repeat for the other two tanks. This method is geometrically accurate, but out of the question with a string and a pocket rule. Have you really got a practical solution, Mr. Frye? Let's have it.

I also wish to propose a few practical problems to other readers.

How many feet of various kinds of gutter under various kinds of conditions should an average me-



chanic do and do properly in eight hours? Ditto downspouts? Ditto metal roofs? Etc.

How will I determine the hours of labor on a furnace job? A skylight? A steel ceiling? Etc.

A woeful percentage of the usual estimator's knowledge is based upon a guess, or upon such a fact as, for instance, that one day he put up 250 feet of something. That day's work is fixed in his mind. He at once felt superior to his fellow mechanics and when he became an estimator, he condescendingly set the mark for the average man at something less, say 200 feet, forgetting how many

times under certain hampering conditions he had to work like something in Charles Dawes' descriptive vocabulary, to get up even fifty feet in a day. If my observations are worth fifteen cents, over 50 per cent of the small shops are just skidding along on luck, making just a little bit more on one job than they lost on the last one, so that, while they don't fail, yet they don't get anywhere. And what do articles and books on estimating offer? In every such manual I have ever seen, the author assumes you can't measure a blueprint for material, but are a whale on determining the amount of labor needed, woefully lacking again on a conception of overhead, and, therefore, due for about 300 pages of what constitutes material and overhead. And really what 99 out of every 100 purchasing the book desired was a price per unit of something, or in lieu of that, a competent authority as to how many hours labor a man or group of men should expend in performing a certain piece of work.

The trade gets little lift from men unable to estimate. It is rare, indeed, that a sheet metal firm charges too much for a *good job*. It just looks like robbery because some crook or ignoramus in competition can make an owner believe he can do it for a great deal less. Altogether now, let's get organized on estimating. Along with Mr. Kothe, who is eternally panning the journeyman with patterns, and Mr. Frye, ring master of mathematical gymnastics, let's have a department of estimating. The fellow between the tanks need not fear of starvation sooner than some contractors who are out and trying to see how close to six cents a pound they can do galvanized iron work. Such a department in AMERICAN ARTISAN would make every issue worth as much to me as a year's subscription. Is it possible that I am alone in this?

Start the ball rolling with the following simple queries. Invite a similar set of queries with each answer. There will surely be a surprising variety of answers received and the queries will soon become posers

more intricate than Mr. Frye's problem:

Assume a perfectly plain roof like the top of an old fashioned square tower. Leave out of consideration all business or working contingencies. Consider only the actual time consumed (1) in the shop preparing the metal, and (2) on the job installing the work, and not including time getting to or from the work.

1—How long should it take a man to notch, fold, paint underside, lay with cleats, mallet down and solder 100 square feet of flat lock tin roof: (a) in 14x20" sheets? (b) in 20x28" sheets?

2—How much solder required in each case?

3—How much reduction should be made for each additional square after the first?

4—How much to add for a condition where there is a fire wall to flash?

5—What to do about (a) a scuttle hole? (b) the scuttle lid? (c) a chimney projecting through the roof?

6—What if posts for a balustrade are to be put on after the roof is laid?

7—What if posts are to be flashed, balustrade being already in place?

The writer thinks it inadvisable, especially on small jobs, to set aside portions of work to be done by a helper and, therefore, supposedly to be estimated less per hour. If a job actually requires help for the mechanic, figure two men and then if in doing the work, a helper can be substituted advantageously, it will help a little on the profits. Some shops do not have a helper and in larger shops where the number is limited to a certain ratio with the number of journeymen, a helper may not be available when the job comes up, putting the reverse English on the profits.

Very truly yours,

FRANK HARRISON.

Kenilworth, Illinois.

The man is the richest whose pleasures are the cheapest.

I. C. Vanasdal, Chicago, Greets Frye with a Simple Solution to the Circle Problem.

At last we've found a man who has reduced the Frye circle problem to where the ordinary mortal can understand it; and after this solution has been read and thoroughly digested by readers of AMERICAN ARTISAN, we can look for a 50 per cent increase in efficiency of all pattern men who have followed the problem through from its beginning.

I. C. Vanasdal, 9 North Carpenter Street, Chicago, Illinois, gives his interpretation of the problem as follows:

AMERICAN ARTISAN:

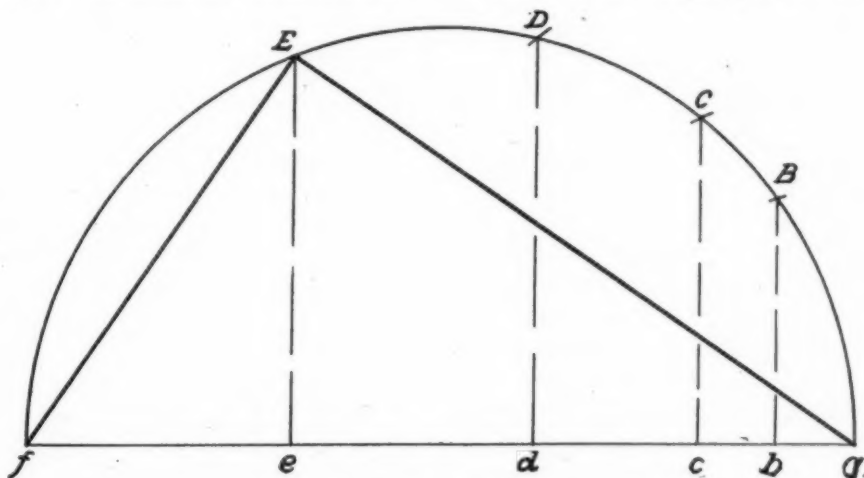
Having been interested and not a little amused by the incessant clamorings of Harry Frye's baby pet and the ineffectual efforts of several of your subscribers to pacify it, I prescribe the following opiate in an endeavor to soothe the infant prodigy.

First, let me state that irrespective of the merits of the method, no

and the square root of 93 is 9.6 or $9\frac{5}{8}$ nearly.

Now, Mr. Pons Asinorum, D. D., *who used to play around with Euclid, is quite an elderly gentleman and most of us are willing to overlook his somewhat angular appearance, but Mr. Frye refuses to play with him until he has dolled him up with intersecting circles, first base and second base chords and circles until the old man has more curves than a candidate for the Follies. Nevertheless, while Harry plays ring-around-a-rosy and rolls his hoops down around first and second base, our old friend Ponsy cavorts about the diamond and is responsible for all the runs that cross home plate.

In order to resurrect the old man from the ignominy and oblivion to which he has been consigned, I enclose a sketch showing the extreme simplicity of the method of Mr. Frye so ornately present and there divested of all the curlycues with which he has been disguised and exposed to the vulgar gaze of the



Graphic Interpretation of Vanasdal's Solution.

one whose duties include much computation of pipe diameters will waste time using a graphic method, since such problems can be solved much more quickly by simple arithmetic, using the principle of *pons asinorum*, as the following solution to the problem in issue June 7 will show.

13 pipes 2-in. diam. — $13 \times 2 \times 2 = 52$
1 pipe 4 in. diam. — $1 \times 4 \times 4 = 16$
1 pipe 5 in. diam. — $1 \times 5 \times 5 = 25$

Sum of squares

93

populace in all his prestine angularity stands Harry's little playmate.

No intersecting circles nor "base chords" are necessary; neither is it essential that the semi-circle shown be drawn to any specified diameter, provided only that it be large enough to contain the areas of the pipes whose capacities it is desired to combine. In view of Mr. Frye's statement that his presentation of the methods contains the fewest possible number of moves and lines, let me

state that this sketch, simple as it is in comparison, yet contains two lines, as aE and Ef, more than are really necessary to a solution of the problem, and they have been drawn merely to illustrate the postulate at B, C and D. The construction is as follows:

In any semi-circle of sufficient size, with radii equal to the given pipe diameters (3 in this case) and a center a, establish points B, C and D on the circumference and project these points to the diameter in b, c and d. These projection lines are *not chords*, Mr. Frye to the contrary notwithstanding, but they may be considered altitudes of right triangles whose respective hypothenuses are the chords (not shown) which subtend the arcs aB, aC and aD.

It is at this juncture that Ponsy, under the impression that it must be "old home week" or the Asinorum family reunion, emerges from obscurity for it's his old home town. In fact, it was right in this semi-circle that he first recited that now famous epic poem, entitled, "The Bridge of the Asses,"* and which Mr. Euclid took down in short hand, like this " $a^2 + b^2 = h^2$ ", for the future guidance of posterity, so Ponsy wouldn't have to go through it all over again in case any of his disciples should become entangled in an argument with one of the owners of the bridge. To elucidate:

If from any point (E in this instance) on the circumference of a circle, a perpendicular, Ee, be drawn to the diameter, this perpendicular becomes a mean between the two parts into which it divides the diameter and the triangle may be solved by proportion. The particular feature which applies to the problem under discussion is that regardless of the position of E on the circumference (an angle inscribed in a semi-circle is always a right angle) the sum of the squares of aE and Ef is always the same since it must equal the square of af. Since the sum of ae and ef is also always af, regardless of the position of e, it necessarily follows that in all triangles so formed within the same

semi-circle, the square of the hypothenuse is directly proportional to the base.

It is evident, then, that the sum of the squares of aB, aC and aD will equal the square of the hypothenuse of a triangle whose base equals the sum of ab, ac and ad. Accordingly ae is made equal to this sum, the perpendicular erected at e and the distance aE is the require diameter.

By reasoning a step further, it becomes evident that Ef represents the diameter of a pipe which, combined with aB, aC and aD will just equal in capacity one having the diameter af, so this construction also may be used to solve the problem in reverse; i. e., divide the capacity of a given pipe into any number of smaller ones.

Now, as to the whys and wherefors of this all being so—why does water expand both ways from 39 degrees so that both ice and hot water stay on top, why do 2 and 2 make 4, and why, oh, please tell me why, does the ratio between the diameter and circumference of a circle resolve itself into that beautifully convenient and easily remembered factor, 3.1415926535. + always and forever plus?

"O tempora, O mores, O h—l."

*Note—While this is the literal interpretation of *pons asinorum*, the name does not imply any real or fanciful resemblance of the triangle to a bridge. The peculiar pertinence of the term lies in the difficulty of comprehension of the proposition by duller minds, it thus forming a bridge or barrier on the royal road to learning. As one lexicographer aptly defines it, "Difficult for Dunces."

Yours truly,

I. C. VANASDAL.

Chicago.

New Coil Gasolene Furnace Being Made By Otto Bernz Company.

The Otto Bernz Company, Inc., Newark, New Jersey, is now marketing two new coil gasolene furnaces, which are known as the No. 13 Bulb and No. 14 Pump. These

articles are marketed to meet the demand for more substantial furnaces.

The brass fittings and malleable iron castings are extra heavy. The reservoirs are made from extra heavy steel. The handle is fitted with a nickel-plated wire grip, which is indestructible. The coil is made of 1/8-inch extra heavy pipe, and is so constructed that it uses only a



The Gasolene Furnace.

small amount of gasolene, yet produces a perfect, blue-hot flame. The shield is re-inforced with wires in the bead at the top, and has a malleable iron base. The top section of this shield tapers inward so as to throw the flame onto the pot of metal which is to be heated.

The reservoir and bottom are made from .065-inch gauge seamless drawn steel, and are welded together by the oxygen-acetylene process. All bushings are extra heavy, and are also welded securely into place. To the bottom there is attached four steel lugs. The reservoir is fitted with a funnel to simplify the filling. The reservoir has a capacity of one gallon.

The No. 13 bulb furnace is fitted with an air valve which has a stuffing box nut to prevent leaks. To the air valve is attached a rubber bulb.

The No. 14 furnace is fitted with the patented "Never Leak" pump, which has been used by these manufacturers for so many years with such wonderful success.

Fundamentals of House Wiring Embodied in New Book by Willoughby.

There is no industry past or present which has so completely and thoroughly edged its way into the

service of the public in the comparatively short space of 20 years as the electrical industry. The vast majority of the nation's work from house cleaning to the heavy duty of drawing a loaded freight train across the mountains is now done by electricity. Viewed from the standard of other basic industries, it is only in its infancy and still think how many, many millions of people have placed their very livelihood upon the efficient working of the commutator whirling around beneath a set of carbon brushes.

It is not surprising then to find men who understand this most elusive subject trying to untangle its technicalities and reducing them to simple language so that school boys may grasp the fundamentals while they are yet in his their teens.

This, George A. Willoughby, supervisor of electrical work at Arthur Hill Trade School, Saginaw, W. S., Michigan, has done in a book entitled, "Fundamentals of House Wiring," published by the Manual Arts Press, Peoria, Illinois. It can be had through AMERICAN ARTISAN, and the price is \$1.

The book is very well written, and is set up in large, easily readable type; it is $5\frac{1}{4} \times 8$ inches and contains sixty-seven pages completely indexed. A book well worth having on the shelf where the young idea can get ahold of it.

Get This Calculator for Metal Roofing. Karl Roth Says That It Is Absolutely Correct.

The number of galvanized roofing "calculators" and tables is almost legion, but all that we have seen are really nothing but a bunch of figures, so that unless great care is taken a mistake can easily be made.

The Braden Manufacturing Company, Terra Haute, Indiana, makers of Champion mitres, eaves troughs, conductor pipes, roofing and other sheet metal products used in building construction, have recently devised a really handy and scientific correct calculator for galvanized roofing, which automatically gives

the number of sheets needed of a certain length to make a roof of a given number of square feet, and vice versa.

The device consists of a circular disk of heavy cardboard mounted between two other boards, something on the order of a certain type of "perpetual" calendars. On this disk are arranged various figures in circles, the outside circle giving the number of sheets. When it is desired to find the number of square feet the disk is set at the sheet number and through cut-outs in the square top board the correct number of feet will be seen below the figure indicating the length of the sheets. Conversely, if, for example, you want to know how many sheets of seven-foot length it takes to cover 750 square feet you find by turning the disk that 49 sheets will cover 744 square feet, while 50 sheets will be enough for 759 square feet—and there is no chance for making a mistake.

On the front of the device there is also an announcement calling attention to the company's improved Multi-V roofing, which is said to be absolutely leak, lightning and fireproof.

Sheet metal contractors who desire to obtain one of these very useful calculators, should write to Karl Roth, secretary of the Braden Manufacturing Company, Terre Haute, Indiana.

AMERICAN ARTISAN Aids Subscriber in Determining Number of Gallons in Tank.

TO AMERICAN ARTISAN:

How many gallons in tank $42 \times 42 \times 30$ inches?

Yours truly,

MODEL SHEET METAL WORKS.

Ans. — $42 \times 42 \times 30$ equal 52,920 cubic inches. There are 231 cubic inches to the gallon. Divide 52,920 by 231 and your answer is 229.1 gallons + in the tank.

There are 1,728 cubic inches to the cubic foot. Divide 1,728 by 231 and you get 7.48 gallons + to the cubic foot.

Notes and Queries

Galvanized Slotted Pipe.

From Hanbury Sheet Metal Company, 512 8th Street, Des Moines, Iowa.

I should like to know where I can purchase $\frac{1}{2}$ -inch galvanized pipe that is slotted the entire length on one side.

Ans.—Central Tool and Machine Company, 3128 Park Avenue, Chicago, Illinois.

Aluminum Solder.

From Thomas Fisher, Hood River, Oregon.

Please advise me who makes aluminum solder.

Ans.—George E. Roesch, 386 New York Street, Aurora, Illinois, and Merchant and Evans Company, 347 North Sheldon Street, Chicago, Illinois.

Copper Siphon Ventilators.

From Hammond Sheet Metal Company, St. Louis, Missouri.

Regarding 12-inch copper siphon ventilators, can you advise us who makes them?

Ans. — Milwaukee Corrugating Company, Milwaukee, Wisconsin, and Arex Company, 11 West Washington Street; Merchant and Evans Company, 347 North Sheldon Street; Paul Dickinson, Incorporated, 3334 South Artesian Avenue, all of Chicago, Illinois.

Sheet Aluminum.

From Jewett Cornice and Roofing Company, 602-604 Market Street, San Antonio, Texas.

Please advise us where we can purchase sheet aluminum.

Ans.—S. Birkenstein and Sons, 1056 West North Avenue; Aluminum Company of America, 360 North Michigan Boulevard, and United Smelting and Aluminum Company, 80 East Jackson Boulevard, all of Chicago, Illinois.

Dumb Waiter Accessories.

From E. L. Hyre, Saybrook, Illinois.

Will you kindly inform me where I can buy pulleys, rope and other accessories for dumb waiters, together with plans or instructions for rigging up and assembling same?

Ans.—D. A. Matot, 1538 Montana Street, Chicago, Illinois.

Every page in this issue is worthy of your careful study.

Ovenware Window Display Rapidly Increased Sales for Michigan Firm.

Greenville Hardware Company Knows How to Use Their Windows to Attract Customers.

AS YOU know, some articles sell much more rapidly than do others.

An article which sells rapidly for one man may not sell so rapidly for another, depending upon the extent to which the buying public in that

gendorf for the firm, shows how they diverted customers in large numbers into their store.

Mr. Sargendorf's description of the window follows:

"We had a kitchen cabinet from which we removed the upper part

crepe paper. We also lined our cupboard with this colored paper.

"Then came a very important part, the advertising, which is very attractive looking for the colors which are used would signal any passer of the window to stop, look



Ovenware Window Display Arranged by Marion Sargendorf for Greenville Hardware Company, Greenville, Michigan, and Which Brought Sales Up Tremendously.

community have been educated to using the article.

For the Greenville Hardware Company, Greenville, Michigan, Pyrex ovenware is one of the fastest selling items.

The accompanying window display, arranged by Mr. Marion Sar-

and used as a cupboard for the idea of advertising that every home should have cupboard full of Pyrex — the most sanitary cooking utensils. After placing the cupboard in our window on two boxes, we covered the floor and these two boxes with Dennison's old gold

and come in. We arranged these banners to the best of our ability.

"Next came the displaying of the merchandise. Just a minute, I forgot to tell you one of the most important things we did. I took a Pyrex bread dish home and had my mother bake the best loaf of bread

she knew how to make in Pyrex. This we left in the dish and placed it near the front of our window, which sure was a sales winner for Pyrex. For women would say, "Look at that wonderful loaf of bread baked in Pyrex." If they didn't have a Pyrex dish, they wanted one ever so bad. We also got some green fruit coloring and made some tea. This, I suppose sounds very peculiar to any one that has never tried it for imitating the real stuff. When we got our tea made we placed the Pyrex tea pot on top of our cupboard where it showed off very nicely.

"In the cupboard we placed only such pieces as are really necessary in every day cooking.

"We have a complete line of Pyrex and there are 100 shapes and sizes made today."

Push Camp Stoves for That Independence Day Trip.

There are a few don'ts which should be observed during the coming week of the Fourth of July. In decorating your windows, don't let your patriotic zeal carry you away to the extent of draping Old Glory in your windows. Old Glory was not meant to be a drape. Use bunting. You can obtain the same effect with this and you won't be guilty of desecrating our country's flag. Remember also there is only one pennant that is ever placed above the American flag on the same staff and that is the church pennant.

Due to the fact that Independence Day comes on Friday, there will be a long week-end and many automobile camping parties will be planned.

How about fixing up the window with camp stoves and other camping outfits? Make a special play in your advertisements on the fact that the long week-end will be a grand opportunity to take that proposed camping trip.

Of course, the entire effort need not be spent upon the camper's outfits. There are many things that will be used by the stay-at-homes, too. But make a special occasion of the ensuing holiday.

Chicago Hardware Outing Date, July 16; Place, Klein's Grove, Chicago.

Paul Hesse, 5830 North Clark Street, Chicago, chairman of the entertainment committee of the Chicago Retail Hardware Association, has announced that the annual outing of the association will take place Wednesday, July 16th, 1924, at Klein's Grove, Crawford and Lincoln Avenues, Chicago.

This outing is one to which hardware men and their families (particularly the children), look forward in high anticipation each year, as the outing is always a success. Ball games, dancing, luncheons, races (not excepting the pie eating contests), are always indulged in by all at the price of sore arms and muscles, but no matter a good time is had.

All donations of merchandise to be used as prizes awarded to the winners of contests should be properly labeled and sent to Paul Hesse, 5830 North Clark Street, Chicago.

Tickets to the outing will be distributed at a later date.

What Effect Will Abandoning Deferred Payment Plan Have on Retail Sales?

Does the installment or deferred payment plan lead to overbuying? Here is a subject that can cause some real hot debating. Ask almost any retail hardware man in a small town his opinions about it and he will tell you that he would rather not sell his goods on that plan, but most people demand some sort of a partial payment arrangement.

On the other hand, there are firms doing business where by far the greater bulk of their sales are made in this way. They make a business of extending credit and make their charges accordingly.

It would appear that a deferred payment plan could be even more successfully carried on in the small town than it could in the large cities, for the reason that a more accurate check can be kept on the individual and his habits in the small town.

The question of the advisability of extending credit—for that is what it amounts to—hinges, then, almost entirely upon the amount of time the merchant is willing to devote to the attention of individual credit risks.

He also has the answer to the problem of whether or not the deferred payment plan stimulates overbuying. True there are many people who, when given this privilege, abuse to an alarming degree. There are also people who, without an installment payment plan, would be unable to buy many of the things which tend to make life less of a drudge, because they are utterly lacking in the ability to save even a small portion of their incomes, yet when tied down to a schedule of specific payments at stipulated times, they are prompt in making these.

For the latter people, the plan is a very good one. It diverts money into constructive channels that would otherwise be frittered away into thin air. When the article is completely paid for, the buyer has something tangible to show for his money, whereas had the seller denied him the privilege of making his payments in this way, no sale would have been made, and the merchant would only have limited his chance for making turnover by just that much.

The man who starts out on a policy of deferring payment on articles purchased from him, must make a regular business of it. In the first place he must have a definite agreement from the purchaser in writing to pay a certain stipulated sum on the first day of the month or each week, whatever the agreement is. He should not hesitate to charge interest at a legal rate on the unpaid balance. This is business, and no chance for fault finding can be found therein.

He should also see to it that payments are made regularly as agreed upon without interruption.

Under these circumstances it is hard to see wherein the disadvantages of the deferred payment plan outweigh the advantages of increased turnover.

National Prosperity Depends Upon Well Organized Vigorous Government.

At the opening of the first circuit court held in New York city on April 4, 1790, Chief Justice Jay made this statement: "It cannot be too strongly impressed on the minds of all how greatly our individual prosperity depends on our national prosperity, and how greatly our national prosperity depends upon a well-organized, vigorous government, ruling by wise and equal laws faithfully executed."

Ours is a government by law. This outstanding fact must be recognized as the unique feature of our new form of government. The real test of our national structure was not the economic question of slavery, but whether or not the law was to be superior to license.

Consider the present volume of credit contracts outstanding which occasion not the least alarm, because the law is in force for their defense, and to the law we look for justice where personal honor is lacking.

It is difficult to avoid breaking some of these laws, but disrespect in the making and in the breaking of law eats like a canker at the foundations of our government and the principles that have made the nation strong and powerful. A little draught now and then from the clear waters of the early principles of our country will do good and give us a new orientation of purpose in the midst of events that seem to move without positive direction.

Don't Fill Your Books with Useless Accounts, But Don't Keep Too Few.

Why discuss the cost of butter and bootleggers, motors and mutton, while you overlook the highest priced commodity there is—"Miscellaneous"?

If you make a budget of your son's expenses at college, you find at the end of the year he consumed much more "Miscellaneous" than you allowed for.

Your wife's household accounts

are lopsided with it; your business apparently is run just to buy "Miscellaneous."

The Miscellaneous account has long served as the general hopper for all expenses that could not be distributed, as well as for many that could be. It will always serve that purpose, but the retailer should not overstep the bounds of common sense. There are few expenditures that cannot be properly earmarked and shown in their true form on the books of account and the profit and loss statement.

One good rule to follow is to determine whether an expense falls under any of the common classifications, as soon as the expenditure is made. If this is not possible—charge it to "Miscellaneous." Don't fill your books with useless accounts, but on the other hand, don't keep too few.

Who Manufactures the "Cyclone" Churn?

TO AMERICAN ARTISAN:

Can you give us the address of the manufacturers of the "Cyclone" churn?

Yours truly,
RECKMEYER HARDWARE CO.

Coming Conventions

Iowa Sheet Metal Contractors' Outing, July 12 and 13, 1924, at Waterloo, William Thomson, P. O. Box 513, Mason City, Iowa.

Michigan Sheet Metal and Roofing Contractors' Outing to Quebec, July 19 to 26, 1924. Frank E. Ederle, Secretary, 1121 Franklin Street, S. E., Grand Rapids, Michigan.

Ohio Sheet Metal Contractors' Association, Southern Hotel, Columbus, Ohio, July 22 to 24, 1924. George F. Mooney, Secretary, 213 First National Bank Building, Columbus, Ohio.

Sheet Metal Contractors' Association of Pennsylvania, Pittsburgh, Pennsylvania, July 23, 24 and 25, 1924. W. F. Angermeyer, Secretary, 714 Homewood Avenue, Pittsburgh, Pennsylvania.

New York State Retail Hardware Association Convention and Exposition, Buffalo, February 10, 11, 12, 13, 1925. Headquarters, Hotel Statler. Exposition at the Broadway Auditorium. John B. Foley, Secretary, City Bank Building, Syracuse.

North Dakota Retail Hardware Association Convention (place not yet selected), February 11, 12, 13, 1925. C. N. Barnes, Secretary, Grand Forks.

Pennsylvania & Atlantic Seaboard Hardware Association Convention and Exhibition, February 16 to 20, 1925, at Philadelphia Commercial Museum. Sharon E. Jones, Secretary, 604 Wesley Building, Philadelphia.

Minnesota Retail Hardware Association Convention, St. Paul Auditorium, St. Paul, February 17, 18, 19, 20, 1925. C. H. Casey, Secretary, Nicollet Avenue and Twenty-fourth Street, Minneapolis.

Southeastern Retail Hardware Association Convention and Exhibition, Birmingham, Ala., May, 1925. Walter Harlan, Secretary-Treasurer, 701 Grand Theater Building, Atlanta, Georgia.

Retail Hardware Doings

California.

John Kegley, western representative of some of the largest hardware manufacturing concerns in the east, has incorporated his business at Lankershim and will operate under the name of John Kegley, Incorporated.

The Young Hardware Company, Incorporated, at St. Helena, has been sold to A. E. Burge.

Illinois.

George Hartmann of the Hartmann Hardware store, Alton, is planning to discontinue his hardware line in his store and to engage his attention exclusively in the sporting goods line.

Iowa.

G. F. Brown of Webster City has purchased the Rea Hardware near the northwest corner of the square at Corydon. The business will be conducted under the name of The Brown Cash Hardware Company.

Kansas.

M. H. Tucker of the M. H. Tucker Hardware Company, 937 Minnesota Avenue, Kansas City, is building a two-story brick structure at 933-35 Minnesota Avenue, which will be ready for occupancy about September 1st.

Minnesota.

E. J. Keable of Little Falls has purchased the stock and fixtures of O. L. Gorden at Little Fork.

Nebraska.

Otto Winter of Bazile Mills has sold his hardware store at that place to Ernest Lueck of Norfolk.

Frank Turk of Pipestone, Minnesota, has moved to Norfolk, where he has purchased a bankrupt hardware stock.

Fred W. Jones has opened a hardware store at Kennard.

North Dakota.

C. A. Menge has disposed of his hardware business at Westhope and bought a hardware store at McVile.

Oklahoma.

I. J. Leeper, formerly of Sentinel, is now looking for a location in that city, where he intends to open a hardware store.

Wisconsin.

C. R. Bailey of Webster has taken over the building, stock and business of the Markville Hardware Company, Markville.

A man is rich in proportion to the number of things he can afford to let alone.

Excellent Specimen Window Display Showing Canning Trim Which Brings Out Virtues of Lorain.

Illustration Also Shows Happy Lorain Kiddies and Cans of Fruit Already Put Up.

THE canning season is ever a source of opportunity for the stove merchant to bring vividly before his prospective customers the advantages of the Lorain equipped gas stove.

The accompanying illustration depicts very strikingly the latest Lorain canning window display as described in the June issue of *Magic Chef*, that most instructive little

the Lorain-equipped gas range especially attractive to the busy housewife—this is the time to keep the advantages of the Lorain oven canning method constantly before your stove prospects. By changing the stove models used and by showing other related kitchen equipment with the gas ranges, a variety of interesting windows can be shown throughout the canning season.

These cards can be had from the American Stove Company and they are available to all Lorain agents.

Sales Stunts Worth Reading and Heeding.

Here are some sales stunts I have tried:

Selling the idea first to myself.

Getting the confidence of my com-



Lorain Oven Canning Display Showing a Gas Stove Fully Equipped with the Lorain Oven Heat Regulator and Also Impressive Lorain Oven Regulator Display Card Available to Lorain Agents.

monthly bulletin of the American Stove Company, Lorain, Ohio.

The picture shows only one of the many attractive windows that can be developed with the Lorain oven canning trim. Gas companies, furniture and department stores, hardware and stove stores do not all have the same size and type of display windows, but the Lorain oven canning trim can be adapted to any window.

Summer time, when the extra work of the canning season makes

In the center of the window shown in the illustration is the cardboard depicting the red wheel and a woman turning it to the desired temperature of heat. A bright ribbon passes from the large sized wheel on the stove also placed in the display.

The fact that most of the canning must be done at a time when the sun's rays are the hottest adds all the more force to the arguments in favor of the Lorain-equipped gas range for the canning work.

petitor, giving him the same in return and being every inch a man.

Keeping a-hollering about the merchandise I have to sell. And a lot of sales are made to those who didn't get me the first time.

Every time I make a sale I ask myself just what I did in that particular instance to clinch the sale. I keep that in mind and use it again and again. I am one of the sales force, not only the boss.

E. W. PETERSON,

Florence, Wisconsin.

Write Your Advertisements From Point of View of Customer, Not That of Maker or Seller.

Palace Hardware House Appeals to Women with Well Arranged Bargain Advertisement.

A HEADLINE appeal to economy is always a dead ringer for getting attention. Most women, in fact, all women, are susceptible to bargains and an appeal to their bargain seeking emotions never fails to bring a response. An article marked down slightly and brought to a

woman's attention will cause her to go to a store that she had never before as much as thought of entering.

Women are born shoppers and when they can purchase an article at reduced price which they have seen marked at a much higher fig-

ure for weeks at a time they are in their glory.

The accompanying advertisement, reprinted from the Erie, Pennsylvania *Sun-Dispatch-Herald*, is a miniature, but a good representation of the tactics used by large department stores.

There is no logical reason why these methods will not work in a small town, just as well as in the large trading centers.

Be truthful, however, and do not advertise bargains unless you have bargains to offer. To do otherwise will only create a distrust in your advertised goods.

There is also one mistake which many stores make regarding the frequency with which they put on special sales. If you are going to have a special sale, all well and good, have one, but don't make the mistake of marking everything "special." The word when overworked loses its power and meaning. So avoid superlatives, reserve these for the superlative article in the real sense of the word.

* * *

Few stores, if any, can afford to advertise for good will only. The best advertising for the retail store is that which gets down to business and talks merchandise and prices. Good will comes from satisfied customers. Satisfied customers come as a result of honest advertising. Advertising which isn't honest is bad advertising. It will eventually do more harm than good. There is never an excuse for dishonest advertising. Mild exaggeration may at times be winked at, but downright misrepresentation is bad and nothing else. Truthful advertising is the only kind which will win. Eventually the honest advertiser who backs up his claims with the goods will get his reward and it will be permanent and big.

PALACE HARDWARE HOUSE

Two Minutes of Your Time and \$2.25

Basement Specials for SATURDAY

100 Piece Dinner Set, \$24.50

Good looking Dinner Set with gold and white spray design. This set also sold "open stock" as many pieces as you wish. Set, specially priced for Saturday

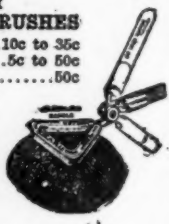
\$24.50

Extra Cups and Saucers, \$3.49 a Dozen

If you happen to need extra cups and saucers, here is a bargain. Of Noritake China, neat patterns. Specially priced per dozen, at \$3.49

We Carry a Full Line of SANITARY HOUSEHOLD BRUSHES

Scrub Brushes from.....10c to 35c
Bottle Brushes from.....5c to 50c
Cuspidor Brushes.....50c
Auto Brushes.....60c
Radiator Brushes.....50c
Deck Brushes.....90c
Toilet Bowl Brushes, 35c to 85c
Percolator Brush.....10c
Vegetable Brushes.....10c
Pastry Brush.....25c
Bath Brushes.....\$1.75
Stork Bottle Brush.....15c and 25c
Wool Wall Brush.....\$1.90
Manicure Brushes.....60c



Floor Mop, 49c

Long handle, polishing floor mop. Special 49c

4-Sewed House Broom, 59c

Strongly constructed Household Mop Wringer \$1.90

Baby Bath Tub, 49c

Good size round Enamel Baby Bath Tub, special 49c.



A Full Line of Baskets

Good grade round willow clothes baskets, specially priced for Saturday at from \$1.25 to \$1.75.

Willow Hampers (for which there is always a use), \$2.99
Oblong Baby Baskets of fine grade willow, special, \$1.99

Garbage Cans, Witt Make, \$2.10 to \$6.50

Witt Garbage Cans are the best made. Any size desired. Priced specially at

\$2.10 to \$6.50

Lovell Wringer, \$5.90

Strongly made Wringer. best rubber roller, ball bearings. Special at \$5.90



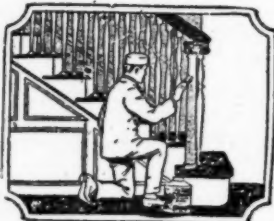
Will Start You on a Lifetime of Labor Saving and Time Saving!

Pick up your phone and call us now

Our Hoover Spring Sale Is Now On!

Don't let this opportunity slip by. Don't let ANOTHER DAY slip by without having one of your rugs cleaned free by the Hoover. And if, after this demonstration, you want to keep the Hoover

You pay only \$2.25 down and small monthly payments soon clear up the balance.



The Staircase

Nothing adds so much to the beauty and attractiveness of your home as does the rich, simple dignity of the white enamel and mahogany stained staircase.

SHERWIN - WILLIAMS OLD DUTCH ENAMEL

and Mahogany Stain used on the staircase add beauty and dignity to your home that never loses its charm. There is an atmosphere of refinement and a richness that no other treatment approaches.

A complete line of stains and wear resisting water-proof varnishes, Mar-net, Sear-not and Rex-par at our store.

PALACE HARDWARE HOUSE

913-915 State Street

Outlook for Immediate Future Business Indicates Continuation of Existing Dullness.

Some Accumulation of Raw Materials for Fall Revival Under Way—Non-Ferrous Metal Markets Continue Inactive.

THAT production of steel and iron is "dragging the bottom" and that sentiment is more cheerful is generally agreed on. But while there has been some slight improvement, the midweek reviews of the industry do not predict any immediate and definite revival of business.

"New buying of steel, rate of mill operations, and shipments to consumers have changed in no significant way in the last week," the *Iron Age* says. "Certain of the larger producers have made some gains in all three respects. A slightly better demand is seen in some of the lighter lines, but in the heavier products, particularly those entering into railroad consumption, there is a decided lag."

The Brookmire Economic Service is advising clients to plan for reviving business in the fall and to prepare to accumulate raw materials in a few months.

The curtailment in producers' and manufacturers' operations, especially in the basic iron and steel industry, has been so drastic that it may soon be found that we have arrived at a bed rock foundation, on which to build a recovery in business. This, we think, explains the improved sentiment in trade and financial circles lately, for even if there is to be no immediate improvement in business, there is the consolation that the retrograde movement which has been going on for the past three months is drawing to an end.

Copper.

The buying of copper during the week was light on both foreign and domestic.

A few domestic consumers are testing the market, but sales are small even for prompt shipment for which lowest prices prevail.

It is understood that some busi-

ness in small lots was done for delivery in Connecticut Valley at 12.37½ cents.

On the other hand some buyers reported they found it difficult to buy at 12.37½ cents delivered.

The market, however, continues to range from 12.37½ cents for June, July and August to 12.50 cents delivered for September-October. There is a general lack of vitality.

Chicago base price on copper sheets is 19¼ cents.

Tin.

The tin market continues to remain in a dull condition and except for one or two transactions between dealers, no business has been reported. Dealers are willing to pay 43.00 cents for future Straits against which there are offers to sell prompts at 43.12½ cents, July, August and September deliveries at 43.12½ cents to 43.25 cents. The prices on Banka and English refined are quoted at ⅛ cent under Straits, and Chinese and other 99 per cent qualities at ½ cent to ⅝ cent discount.

As trading in these grades is almost at a standstill, the prices are more or less nominal.

Chicago base price on pig iron per 100 pounds is 46.75; bar tin, 48.75.

Lead.

Demand for lead continues slack, little inquiry being reported for either prompt or future shipment.

The East St. Louis position is slightly easier, and prompt soft Missouri lead is offered at 6.77½ cents, East St. Louis basis in the outside market.

A hand to mouth policy seems to have been resumed by buyers and immediate needs are apparently small with little prospect of betterment for some weeks.

There is no improvement in the condition of trade among the man-

ufacturers of lead products, and the outlook appears not overbright for the next quarter.

Chicago base for American pig is 8.75; bar, 9.75.

Zinc.

Domestic consuming zinc demand is dull. But operators' bids were renewed during the midweek at 5.75 cents, East St. Louis, but did not find acceptance. In fact, even at 5.75 cents, the nominal market for prompt shipment, there seems little desire to sell, and even apart from such support as is afforded by the bids referred to, the market at present shows steadiness and resistance against further decline.

An occasional fair sized order has been placed by sheet mills, but there is no sustained activity. Sheet operations are on a low scale, and trade with the brass mills is also unsatisfactory.

Solder.

Chicago warehouse prices on solder are as follows: Warranted, 50-50, \$28.25; Commercial, 45-55, \$27.50, and Plumbers', \$26.50, all per 100 pounds.

Bolts and Nuts.

Only small orders are noted in nuts, bolts and rivets. While various concessions in price still are being made, the tendency is to adhere more firmly to published discounts.

On hot pressed square or hexagon blank or tapped bolts, a few contracts have been taken at \$4.75 off list, but \$5 off list still is quoted by some. Large machine bolts are quoted at 60 and 20 off, and large carriage bolts at 60 and 10 off.

On structural rivets some makers have quoted as low as 2.50 cents, while others will not go below 2.65 cents in carloads and 2.75 cents in less than carload lots.

The regular discount on small

Chicago Warehouse Prices on Hardware and Metals.

AMERICAN ARTISAN AND HARDWARE RECORD is the only publication containing Western Hardware and Metal prices corrected weekly.

METALS

PIG IRON.

Chicago Foundry..	20 50
Southern Fdy. No.	
2	25 01 to 26 01
Lake Sup. Char-	
coal	29 04
Malleable	20 50

FIRST QUALITY BRIGHT TIN PLATES.

IC	20x28 112 sheets	25 80
IX	20x28	27 25
IXX	20x28 56 sheets	15 35
IXXX	20x28	16 45
IXXXX	20x28	17 55

TERNE PLATES

	Per Box
IC 20x28, 40-lb. 112 sheets	\$25 60
IX 20x28, 40-lb. " "	25 50
IC 20x28, 50-lb. " "	21 80
IX 20x28, 50-lb. " "	24 70
IC 20x28, 25-lb. " "	20 50
IX 20x28, 25-lb. " "	23 70
IC 20x28, 20-lb. " "	18 30
IV 20x28, 20-lb. " "	21 15
IC 20x28, 15-lb. " "	17 05
IC 20x28, 12-lb. " "	15 75
IC 20x28, 8-lb. " "	14 05

COKE PLATES.

Cokes, 80 lbs., base, 20x28.	\$12 70
Cokes, 90 lbs., base, 20x28.	12 95
Cokes, 100 lbs., base, 20x28.	13 25
Cokes, 107 lbs., base, IC	
20x28	13 60
Cokes, 135 lbs., base, IX	
20x28	15 40
Cokes, 155 lbs., base, 56	
sheets	8 80
Cokes, 175 lbs., base, 56	
sheets	9 70
Cokes, 195 lbs., base, 56	
sheets	10 65

BLUE ANNEALED SHEETS.

Base 10 ga.per 100 lbs. 3 90

ONE PASS COLD ROLLED BLACK.

No. 18-20.....per 100 lbs.	\$4 50
No. 22-24.....per 100 lbs.	4 55
No. 26.....per 100 lbs.	4 60
No. 27.....per 100 lbs.	4 65
No. 28.....per 100 lbs.	4 70
No. 29.....per 100 lbs.	4 75

GALVANIZED.

No. 16.....per 100 lbs.	\$4 85
No. 18-20.....per 100 lbs.	5 00
No. 22-24.....per 100 lbs.	5 15
No. 26.....per 100 lbs.	5 30
No. 27.....per 100 lbs.	5 45
No. 28.....per 100 lbs.	5 60
No. 30.....per 100 lbs.	6 10

BAR SOLDER.

Warranted.	
50-50	per 100 lbs. 23 25
Commercial.	
45-55	per 100 lbs. 27 50
Plumbers	per 100 lbs. 26 50

ZINC.

In Slabs

SHEET ZINC.

Cask lots, stock, 100 lbs.	11 50
Less than cask lots, 100 lbs.	11 75

BRASS.

Sheets, Chicago base	17% c
Mill Base	15% c
Tubing, brazed, base	23c
Wire, base	15% c

COPPER.

Sheets, Chicago base	19 1/4 c
Mill base	18 1/4 c
Tubing, seamless, base	22c
Wire, No. 9 & 10 B. & S. Ga.	
.....	16 1/4 c
Wire, No. 11, B. & S. Ga.	16 1/4 c

LEAD.

American Pig	8 75
Bar	9 75
Sheet.	
Full Coils	per 100 lbs. 10 75
Cut Coils	per 100 lbs. 11 00

TIN.

Pig Tin	per 100 lbs. 46 75
Bar Tin	per 100 lbs. 48 75

HARDWARE, SHEET METAL SUPPLIES, WARM AIR FURNACE FITTINGS AND ACCESSORIES.

ADZES.

Coopers'	
Barton's	Net
White's	Net

AMMUNITION.

Shells, Loaded, Peters.	
Loaded with Black Powder 18%	
Loaded with Smokeless Powder	18%

Winchester.	
Smokeless Repeater	
Grade	20 & 4%
Smokeless Leader	
Grade	20 & 4%
Black Powder	20 & 4%

U. M. C.	
Nitro Club	20 & 4%
Arrow	20 & 4%
New Club	20 & 4%

Gun Wads—per 1000.	
Winchester	
7-8 gauge 10 & 7 1/2 %	
9-10 gauge 10 & 7 1/2 %	
11-28 gauge 10 & 7 1/2 %	

ASBESTOS.

Paper up to 1/16.....	6c per lb.
Rollboard	6 1/4 c per lb.
Millboard 3/32 to 1/4.....	6c per lb.
Corrugated Paper (250	
sq. ft. to roll).....	\$6.00 per roll

AUGERS.

Boring Machine	40 & 10%
Carpenter's Nut	50%
Hollow.	
Stearns, No. 4, doz.....	\$11 50
Post Hole.	
Iwan's Post Hole and Well 35%	
Vaughan's, 4 to 9 in.....	\$15 60

AXES.

First Quality, Single	
Bitted (unhandled), 3 to	
4 lb., per doz.....	\$14 00
Good Quality, Single	
Bitted, same weight, per	
doz.	13 00

BARs, CROW.

Steel, 4 ft., 10 lb.....	\$ 80
Steel, 5 ft., 18 lb.....	1 40
Pinch Bars.	
5 1/2 ft., 24 lb.....	1 60

BARs, WRECKING.

V. & B. No. 12.....	\$0 30
V. & B. No. 24.....	0 42
V. & B. No. 324.....	0 67
V. & B. No. 30.....	0 48
V. & B. No. 330.....	0 63

BITS.

All Vaughan and Bushnell.	
Screw Driver, No. 30, each	\$ 30
Screw Driver, No. 1, each	18
Reamer, No. 80, each.....	45
Reamer, No. 100, each.....	45
Countersink, No. 13, each.....	23
Countersink, Nos. 14-15, each	30

BLADES, SAW.

Wood.	
Atkins 30-in.	
Nos.	6 40 26
	\$8 90 \$9 45 \$5 40

BLOCKS.

Wooden	45%
Patent	45%

BLOW TORCHES (See Firepots).

BOARDS.

Stove.	
Crystal, 33"	Per Doz. \$23 90
Wash.	
No. 760, Banner Globe	
(single)	per doz. \$5 25
No. 652, Banner Globe	
(single)	per doz. 6 75
No. 801, Brass King.	
.....	per doz. 8 25
No. 860, Single—Plain	
Pump	6 25

BOLTS.

Carriage.	
Small, roll thread.....	50-10-5%
Small and Large cut	
thread	50-5%

Machine.

Small, roll thread.....	60-5%
Small, cut thread.....	50-10-5%
Stove	70-5%

BRACES, RATCHET.

V. & B. No. 444, 8 in.....	\$4 54
V. & B. No. 222, 8 in.....	3 89
V. & B. No. 111, 8 in.....	3 55
V. & B. No. 11, 8 in.....	3 02

BRUSHES.

Hot Air Pipe Cleaning.	
Bristle, with handle, each	\$0 85

Flue Cleaning.	
Steel Only, each.....	\$1 25

BURRS.

Copper Burrs only.....	40%
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BUTTS.

Steel, antique copper or dull	
brass finish—case lots—	
3 1/2 x 3 1/2—per dozen pairs	\$3 66
4 x 4	4 92

Heavy Bevel steel inside sets,	
case lots—	
.....per dozen sets	7 80

Steel bit keyed front door	
sets, each	1 90

Wrought brass bit keyed	
front door sets, each.....	3 25

Cylinder front door sets,	
each	7 50

CEMENT, FURNACE.

American Seal, 5 lb. cans, net	\$ 45
" " 50-lb. cans, " "	90
" " 25 lb. cans, " "	2 00
Asbestos, 5 lb. cans, net.....	45
Pecora	per 100 lbs. 7 51

CHAINS.

% in. proof coll chain, per	
100 lbs.	\$8 50
American coll chain.....	40 & 10%

CHIMNEY TOPS.

Iwan's Complete Rev. &	
Vent.	30%
Iwan's Iron Mountain only.....	35%
Standard	30 to 40%

CHISELS.

Cold.	
V. & B. No. 25, 1/4 in., ea.	\$0 26
V. & B. No. 25, 1/2 in., ea.	38

Diamond Point.	
V. & B. No. 55, 1/4 in.....	0 33
V. & B. No. 55, 1/2 in.....	0 45

Firmer Bevelled.

Round Nose.	
V. & B. No. 65, 1/4 in.....	0 33
V. & B. No. 65, 1/2 in.....	0 45

Socket Firmer.

Cape.	
V. & B. No. 50, 1/4 in.....	0 31
V. & B. No. 50, 1/2 in.....	0 62

CHUCKS, DRILL.

Goodell's, for Goodell's Screw	
Drivers	List less 35-40%
Yankee, for Yankee Screw	
Drivers	\$6 00

CLAMPS.

Adjustable.	
No. 100, Door (Stearns)	
doz.	\$22 00

Carpenter's.	
Steel Bar.....	List price plus 20%

Hose.	
Sherman's brass, 3/4-inch	
per doz.	\$0 48
Double, brass, 1/4-inch, per	
doz.	1 20

CLINKER TONGS.

Front Rank, each.....	\$1 75
Per doz.	13 00

CLIPS.

Damper.	
Acme, with tail pieces,	
per doz.	\$1 25
Non Rivet tail pieces,	
per doz.	25

COPPERS—Soldering.

Pointed Roofing.	
3 lb. and heavier.....	per lb. 40c
2 1/2 lb.	45c
2 lb.	48c
1 1/2 lb.	55c
1 lb.	60c

CORD.

No. 7 Std. per doz. banks.....	\$10 75
No. 8 " " " " " "	12 30

CORNICE BRACKES.

Chicago Steel Heading.	
Nos. 1 to 6B.....	10%

COUPLING HOSE.

Brass	per doz. \$2 20
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CUT-OFFS.

Kuehn's Korrekt Kutoffs:	
Galv., plain, round or cor. rd.	
Standard gauge	40%
26 gauge	10%

DAMPERS.

"Yankee" Hot Air.	
7 inch, each 20c, doz.....	\$1 75
8 " " " " " "	2 40
9 " " " " " "	2 75
10 " " " " " "	3 00

Smoke Pipe.	
7 inch, each.....	\$ 35
8 " " " " " "	40
9 " " " " " "	50
10 " " " " " "	60
12 " " " " " "	90

Reversible Check.	
8 inch, each.....	\$1 50
9 " " " " " "	1 70

DIGGERS.

Post Hole.	
Iwan's Split Handle	
(Eureka)	
4-ft. Handle.....per doz.	\$14 00
7-ft. Handle.....per doz.	36 00
Iwan's Hercules pattern,	
per doz.	14 90

DRILLS.

V. & B. Star, 12-inch Length.	
1/4, 5/16 and 3/8, each....	\$ 27
1/2, each	38
1, each	57
1 1/2, each	85

V. & B. Star, 18-inch Length.	
1/4, each	\$ 35
1/2, each	47
1, each	72
1 1/2, each	1 10

EAVES TROUGH.

Milcor	
Galv. Crimpedge, crated.....	75%

ELBOWS—Conductor Pipe.

Milcor	
Galv., plain or corrugated,	
round flat.	
Crimp, Std. gauge.....	65%
26 Gauge	40%
24 Gauge	10%

Square Corrugated.	
Milcor	
Standard gauge	50%
26 gauge	30%

Portico Elbows.

rivets is 70 and 10 off, although occasionally an extra 10 per cent is granted.

Wire and Nails.

Any improvement in connection with wire rods is in connection with mixed carloads.

A few more such were received the past week than in the week preceding. Jobbers are running short of certain wire products, but the turnover is not as great as it should be because the farm season has gone beyond the time for erecting and repairing fences.

Less price cutting is done, however, and the tendency apparently is more decided to hold 2.65 cents and 2.90 cents, base Pittsburgh, on wire and wire nails, respectively.

Sheets.

The tonnage of sheet business booked from day to day continues rather light. It is light from the viewpoint of mill capacity, but allowance must be made for the large increase there has been in capacity in the past few years. Even in this apparently dull market the tonnage of sheets being brought from day to day is fairly large, judged by pre-war standards, and except for the great growth in the automobile trade there is no particular reason why the sheet tonnage ought to be much greater now than before the war. Population has increased less than 15 per cent.

According to some reports they are, if anything, still lower on blue annealed and black.

However, the continued quotation is general at 2.75 cents to 2.80 cents on blue annealed, 3.60 cents to 3.65 cents on black and 4.75 cents to 4.80 cents on galvanized. These figures cover the great bulk of the transactions, but in each of the three grades there are some sales being made at less than the lower of the figures here given. In the case of blue annealed, the 2.80 cents price does not seem to be done very much except in the case of the leading interest.

Tin Plate.

Unless demand for tin plate improves mills cannot continue to oper-

ate at 65 or 70 per cent of capacity. In July there will be the usual shut-downs for vacations and mill repairs, and the average for that month will probably be under 50 per cent.

The thing that held up operations so remarkably well in March and April when around 90 per cent was the general average, as against 70 per cent at present, was the sustained activity in general line cans.

Concerning the three large vegetable packs, it is too early to obtain any definite forecast regarding corn and tomatoes, and the reports concerning the late pea crop are meager.

Most of the fruit packs promise to be normal. Preparations have been made for most if not all of these, and specifications are in hand

or are being received from large can makers for the tin plate material.

No new inquiries are appearing to test the market, which is generally quoted at \$5.50 per base box of 100 pounds.

Old Metals.

Wholesale quotations in the Chicago district, which should be considered as nominal, are as follows: Old steel axles, \$16.75 to \$17.25; old iron axles, \$23.50 to \$24.00; steel springs, \$18.00 to \$18.50; No. 1 wrought iron, \$11.50 to \$12.00; No. 1 cast, \$16.00 to \$16.50, all per net tons. Prices for non-ferrous metals are quoted as follows, per pound: Light copper, 8 cents; light brass, 5 cents; lead, 5 cents; zinc, 3¼ cents, and cast aluminum, 14½ cents.

Pig Iron Sales Continue to Mount—Prices Stabilizing—Operations Around 50%

May Production Declined 12 Per Cent from the April Total—Chicago Price Hovers Around \$20.

“EVENTS of the week further strengthened previous indications that the low point in the recent relapse of the steel market has been reached or passed,” the *Iron Trade* says. “Sentiment has unmistakably turned upward, although the revival of buying seems likely to come gradually. Operations are holding their own at 45 to 50 per cent of capacity. Structural steel awards reported this week aggregate 34,144 tons, the largest in nine weeks. Some further releases of suspended orders have come from the automobile industry.”

Both reviews comment on the recent sharp price cutting. The *Iron Trade* puts the composite price for fourteen leading iron and steel products at \$40.37 a ton and the *Iron Age's* pig iron composite price is \$19.54, which is the lowest price since April, 1922.

Buying of northern foundry and malleable iron continues practically unabated and is going into its third week at the rate of 50,000 tons weekly.

It is becoming more evident that this buying is mostly through the last half, indicating confidence in present prices; also, that foundries are buying iron now more on the basis of price than actual business on their books. The most general quotation is \$20.50, furnace.

A few sales of \$20 iron have been made, but they have usually represented some unusual circumstance. Inquiries and sales of 1000 tons are numerous.

An inquiry of this size is out from a Michigan buyer for southern iron, which ranges from \$19.50 to \$20.50, Birmingham.

While furnace interests in the south report that indications point to a little improvement in the pig iron market.

Quotations are on a level of \$20 to \$21 for No. 2 foundry iron. Inquiries are more numerous, but are not developing much business. Local consumption continues to lag, although pressure pipe and radiator makers are melting iron steadily.

Uniform, Collar Adjustable.	
5-inch	Doz. \$2 00
6-inch	2 10
7-inch	3 60
WOOD FACES—50% off list.	

FENCE.	
Field Fence	61 1/2%
Lawn	53%

FILES AND RASPS.	
Heller's (American)	60-10%
American	60-10%
Arcade	50%
Black Diamond	40-10-5%
Eagle	50%
Great Western	50%
Kearney & Foot	50%
McClellan	50%
Nicholson	50%
Simonds	60%

FIRE POTS.	
Ashton Mfg. Co.	
Complete line	
Firepots and Torches	52%

Otto Berns Co.	
No. 1 Furn. Gasolene with large shield, 1 gal.	\$ 75
No. B Furn. Kerosene, 1 gal.	15 13
No. 10 Brazier, Kerosene or Gasolene, 10 gals.	47 53
No. 5 Torch, Gasolene or Kerosene, 1 pt.	7 33
No. 83 Torch, Gasolene, 1 quart	5 40
No. 86 Torch, Gasolene, 1 pint	4 05

Clayton & Lambert's.	
East of west boundary line of Province of Manitoba, Canada, No. Dakota, So. Dakota, Nebraska, Kansas, Oklahoma, Arizona, San Angelo and Laredo, Texas	52%
West of above boundary line	48%

Geo. W. Diener Mfg. Co.	
No. 02 Gasolene Torch, 1 qt.	\$ 55
No. 0250, Kerosene or Gasolene Torch, 1 qt.	7 50
No. 10 Tinner's Furn. Square tank, 1 gal.	12 60
No. 15 Tinner's Furn. Round tank, 1 gal.	12 00
No. 21 Gas Soldering Furnace	3 60
No. 110 Automatic Gas Soldering Furnace	10 50
Double Blast Mfg. Co. Gasolene, No. 25 and 35	60%
Quick Meal Stove Co. Vesuvius, F.O.B. St. Louis	30%
(Extra Disc't. for large quantities)	

Chas. A. Hones, Inc.	
Buzzer No. 1	\$ 9 00
" " 2	12 00
" " 22	13 50
" " 42	15 00
" " 43	19 00

FREEZERS—ICE CREAM.	
Peerless and Alaska	
1 quart	\$2 95
2 quart	3 45
3 quart	4 10
White Mountain	
1 quart	\$4 85
2 quart	5 65

GALVANIZED WARE.	
Pails (Competition), 8 qt.	\$1 95
10-qt.	2 20
12-qt.	2 45
14-qt.	2 75
Wash tubs, No. 1	\$6 00
No. 2	6 85
No. 3	8 00

GARAGE DOOR HARDWARE.	
Stanley	All net

GAUGES.	
Marking, Mortise, etc.	Nets
Wire.	
Disston's	25%

GIMLETS.	
Discount	65% and 10%

GLASS.	
Single Strength, A and B.	all sizes
Double Strength, A, all sizes	83 & 85%
	84%

GREASE, AXLE.	
Frazers'	
1-lb. tins, 36 to case, per case	\$ 4 70
3-lb. tins, 24 to case, per case	7 50
5-lb. tins, 12 to case, per case	7 20
10-lb. tins, per dozen	10 40
15-lb. tins, per dozen	13 80
25-lb. tins, per dozen	19 80

HAMMERS, HANDLED	
All V. and B.	Each, net
Blacksmiths' Hand, No. 0.	
26-oz.	\$0 87
Engineers' No. 1, 26 oz.	87
Farriers' No. 1, 7-oz.	90
Machinists' No. 1, 7-oz.	64

Nail.	
Vanadium, No. 41, 20-oz. each	1 42
Vanadium, No. 41 1/2, 16-oz. each	1 42
V. & B., No. 11 1/2, 16-oz. each	93
Garden City, No. 11 1/2, 16-oz., each	69
Tinner's Riveting, No. 1, 8-oz., each	71
Shoe, Steel, No. 1, 13-oz. each	71
Tack.	
Magnetic.	
No. 5, 4-oz., each	78

HAMMERS, HEAVY.	
Farrier's, No. 10, 10-oz.	\$1 01

HANDLES.	
Axe.	
Hickory, No. 1....per doz.	4 00
Hickory, No. 2....	3 00
1st quality, second growth	6 00
Special white, 2nd growth	6 00

Chisel.	
Hickory, Tanged, Firmer assorted	per doz. 55c
Hickory, Socket, Firmer, Assorted	per doz. 70c
File	per doz. \$1 20

Hammer and Hatchet.	
No. 1 per doz.	\$0 90
Second Growth hickory, per doz.	1 50
Soldering.	
Per doz.	\$2 40

HANGERS.	
Conductor Pipe.	
Milcor Perfection Wire	25%
Eaves Trough.	
Steel hangers	30%
Triple Twist wire	10%
Milcor Eclipse Wire	20%
Milcor Triplex Wire	15%
Milcor Milwaukee Extension	15%
Milcor Steel (galv. after forming) List plus	12 1/2%
Milcor Selflock E. T. Wire, List plus	40%

HASPS.	
Hinge, Wrought, with staples.	Net

HATCHETS.	
V. & B. Supersteel.	Each
Broad, No. 1, 24-oz.	\$1 53
Half, No. 1, 15-oz.	1 33
Half, No. 3, 27-oz.	1 44
Claw, No. 1, 19-oz.	38
Flooring, No. 1, 20-oz.	1 53
Shingling, No. 1, 17-oz.	1 28
Lathing, No. 1, 14-oz.	1 28
Lathing, No. 2, 17-oz.	1 33

Vanadium Steel.	
Half, No. 2, 22-oz.	\$1 04
Underhill Pattern Lathing, 9 row, 19-oz.	2 14

HINGES.	
Heavy Strap, in Bundles.	
4 inch, dozen pr.	\$1 26
5 " " "	1 74
6 " " "	2 12
8 " " "	3 54
Extra Heavy T in Bundles.	
4 inch, dozen pr.	\$1 90
5 " " "	2 61
6 " " "	2 82
8 " " "	4 30

HOES.	
Garden	net

HOOKS.	
Box.	
V. & B. No. 1, each	\$0 26
Conductor.	
Milcor	
"Direct Drive" Wrought Iron for wood or brick	15%
Hay.	
V. and B. No. 1, each	26

Bar Meat.	
V. and B. No. 28, 3/4", each	00
V. and B. No. 28, 1/2", each	16

Screw Meat.	
V. & B. No. 2, per gro.	7 15
Butchers' "8."	
V. & B. No. 6, each	09
V. & B. No. 8, each	13

HOSE.	
Per Ft.	
1/2-in. 2 ply molded	12c
1/2-in. cord	3 1/2c to 10c
1/2-in. wrapped	14c

HUMIDIFIERS.	
"Front-Rank," Automatic.	
In single lots	50%
In lots of 10 or more	50-55%
In lots of 25 or more	50-10%
Vapor pans, etc., each	50%

IRONS.	
Sad.	
Genuine Mrs. Potts, nickel plated, per set	\$1 55
Asbestos No. 70, per set.	2 10
Asbestos No. 100, per set.	2 30
E. C. Stearns'.	
No. OA Corner, doz. sets	\$2 50
No. OB " " "	2 75

KNIVES.	
Butcher.	
Beechwood Handles, 6-inch blade	25%
Beechwood Handle, 7-inch blade	25%
Beechwood Handles, 3-inch blade	25%
Cooper's Hoop	25%
Drawing.	
Standard	25%
Adjustable	25%
Barton's Carpenters'	25%

Hay.	
Iwan's Solid Socket	25%
Heath's	25%
Iwan's Sickle Edge	25%
Iwan's Imp'd Serrated	25%
Hedge.	
Challenge	25%
Disston's No. 1	25%
Putty.	
Common	25%
Lander's	25%

Scraping.	
Beech Handles	25%
Lander's	25%

KNOBS.	
Door.	
Mineral	per doz. \$2 00
Porcelain	2 00
Jet	2 00

LADDERS.	
Step.	
Common, per ft.	28c
Common, with Shelf, add 10c	
IXL	34c
Challenge, 6 to 9 ft.	55c
10 to 16 ft.	60c
Kant-Break, per lineal ft.	75c

LANTERNS.	
Per doz.	
Monarch tin, hot blast	\$ 25
Dietz No. 2 cold blast	13 00
Best tubular	8 25
Competition lanterns No. 0 tubular	6 90

LAWN MOWERS.	
12-inch	\$5 20
16-inch	5 85
Ball Bearing.	
4 blade, adjustable bearing.	
14"	\$5 20
16"	7 80

LEATHER BELTING.	
From No. 1 Oak Tanned Butts.	
Extra heavy, 18-oz.	35%
Heavy, 16-oz.	40%
Medium, 14 1/2-oz.	40%
Light, 13-oz.	50%

LEATHER LACING.	
Cut, strictly No. 1	45%

LEVELS.	
Disston, No. 28 Asst.	\$22 05
" No. 18, 20 in., each	1 33
" No. 22, 24 in., each	2 40
" Shafting, 6 in.	19 80
" " 6 in. gr. glass	24 20
" No. 1 Asst.	5 75
" No. 2 Asst.	12 40
" 24-26 in., each	1 02
" 28-30 in., each	1 00

LIFTERS.	
Stove Cover.	
Coppered	per gro. \$6 00
Alaska	4 75

LOCKS.	
Barn Door.	
No. 60 Stearns'.	per doz. \$11 00
No. 80 " "	20 00

MALLETS.	
Carpenters'.	
Fibre Head No. 2, per doz.	\$12 00
" No. 3, " "	15 50
" No. 3 1/2, " "	20 50
Round Hickory, per doz.	\$3.00—5 00
Tinner's.	
Hickory	per doz. \$2 25

MATS.	
Door.	
National Rigid	5 & 10 & 5%
Acme Steel Flexible	50%

MITRES.	
Galvanized steel mitres, and caps, end pieces, outlets	30%
Milcor	
Galv. one piece stamped	40%

MOPS.	
Cotton, Star (Cut Ends).	
Pounds 12' 15' 18' 24'-3-oz.	
Per doz. \$4 00 4 35 5 50 7 00	
Enterprise	10%
Parker	50 & 5%

NAILS.	
Cut Steel	\$4 55
Cut Iron	4 55

Wire.	
Common	3 65
Cement Coated	3 00

NETTING, POULTRY.	
Galvanized before weaving	45-10%
Galvanized after weaving	45%

NIPPERS.	
Nail Cutting.	
V. & B. No. 30	78c
Double Duty.	
V. & B. No. 54	\$1 03

NOZZLES.	
Hose.	
Diamond	per doz. \$5 75
Magic	9 50

OILERS.	
Chase Pattern.	
Brass and Copper	10%
Zinc Plated	40 & 5%
Railroad.	
Brass	20 & 5%
Coppered	50 & 5%
Steel.	
Copper Plated	70 & 5%

OPENERS.	
Delmonico	per doz. \$1 30
Never Slip	" 60
Crate.	
V. & B., per doz.	\$7 25—11 00



*The Best Eaves Trough
Miter in the
World*

Ask
your Jobber for
CHAMPION MITERS & Saws
~all Dependable Products~

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PRODUCTS

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INDIANA

CHICAGO STEEL SLITTING SHEAR

LIGHT—POWERFUL DURABLE



Capacity 10 gauge sheets
Any Length or Width
Flat Bars 3/16x2"
Weight 22 pounds
Price \$12.50 Net
F. O. B. Chicago

Made of pressed steel and equipped with hold-down. Blades of highest grade crucible steel. Most indispensable high grade shears made. Equal to other shears selling at over twice the price.

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DREIS & KRUMP MFG. CO., 7404 Loomis St., Chicago

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**IMPROVED
REVOLVING**



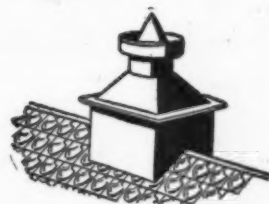
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It runs in a self-lubricating bearing that is not affected by heat or cold. It is noiseless and produces an upward current of air. No down draft. It will satisfy and give you a good profit.

BERGER BROS. CO.

229 to 237 ARCH STREET

WAREHOUSES AND FACTORY: 100 TO 114 BREAD STREET
PHILADELPHIA, PA.



**add to the reputation
of your products**

If they are exposed to the
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INLAND COPPER ALLOY STEEL SHEETS

Durable All the Way Through

INLAND STEEL COMPANY

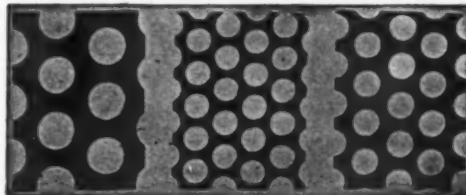
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Milwaukee St. Paul St. Louis

Mills at Indiana Harbor, Ind., and Chicago Heights, Ill.

PERFORATED METALS



All Sizes and Shapes of Holes

In Steel, Zinc, Brass, Copper, Tinplate, etc.

For All Screening, Ventilating and Draining

EVERYTHING IN PERFORATED METAL

THE HARRINGTON & KING PERFORATING CO.

5649 FILLMORE ST.—CHICAGO, ILL. U. S. A.

NEW YORK OFFICE: 114 LIBERTY ST.

**Hand-Dipped is one kind of galvanized shingle, and
the other kind is stamped from galvanized sheets**

—We make both kinds.

The difference is that hand-dipped shingles are galvanized by being immersed separately in molten zinc after having been stamped out of sheets of prime roofing tin. Edges as well as sides are coated.

Tight-Coat Shingles are made from sheets which have already been galvanized.

Both kinds are described in our booklet, "Concerning that Roof." We'll send a copy promptly.



Cortright Metal Roofing Co.
Philadelphia Chicago

Cortright Metal Shingles



KESTER

Acid-Core Solder

REQUIRES ONLY HEAT

Sample for Test

Upon Request

CHICAGO SOLDER COMPANY
4201 Wrightwood Ave., CHICAGO, ILL.

FAILS.	
Cream.	
14-qt., with gauge.	per doz. \$9 50
18-qt. without gauge.	per doz. 11 00
20-qt., without gauge.	per doz. 11 75

Sap.	
10-qt., IC Tin	per doz. \$4 00
12-qt. "	" 5 50

Stock.	
Galv. qts. 14	16 18 20
Per doz. \$9 75	10 75 12 75 14 50

Water.	
Galvanized qts. 10	12 14
Per doz. \$5 75	6 50 7 25

PASTE.	
Asbestos Dry Paste:	
200-lb. barrel	\$15 00
100-lb. barrel	8 00
35-lb. pail	3 25
10-lb. bag	1 00
5-lb. bag	55
2½-lb. cartons	30

PINNERS.	
All V. and B.	
Carpenters', cast steel,	
No. 6	8 10 12
Each \$0 45	\$0 55 \$0 64 \$0 74
Blacksmiths', No. 10	\$0 75

PIPE.	
Conductor.	
"Interlock" Galvanized.	
Crated and nested (all	
gauges)	60-20%
Crated and not nested	
(all gauges)	60-15%
Square Corrugated A and B and	
Octagon.	
29 gauge	60-10%
28 "	60-10%
26 "	60-10%
24 "	60-10%

"Interlock."	
Crated and nested (all	
gauges)	60-20%
Prices for Galvanized Toncan	
Metal, Genuine O. H. Iron, Lyon-	
more Metal and Keystone C. B.	
on application.	

Stove.	Per 100 joints
26 gauge, 6 inch E. C.	
nested	17 00
26 gauge, 7 inch E. C.	
nested	19 00
28 gauge, 5 inch E. C.	
nested	14 00
28 gauge, 6 inch E. C.	
nested	15 00
28 gauge, 7 inch E. C.	
nested	17 00
30 gauge, 5 inch E. C.	
nested	12 00
30 gauge, 6 inch E. C.	
nested	13 00
30 gauge, 7 inch E. C.	
nested	15 00
T-Joint Made up	
6-inch, 28 ga. ...per 100	32 50

Furnace Pipe.	
Double Wall Pipe and	
Fittings	40%
Single Wall Pipe, Round	
Pipe Fittings	40%
Galvanized and Black	
Iron Pipe, Shoes, etc.	40%
Milcor Galvanized	40%
Lead.	
Per 100 lbs.	\$10 25

PLANES.	
Stanley Iron Bench	Net

PLIERS.	
(V. & B.)	
Nut, No. 3, each	\$ 60
" No. 25, each	69
Gas, No. 7, each	55
" No. 8, each	61
" No. 12, each	87
Button's Pattern.	
No. 6 each	61
No. 8 each	74
Double Duty, No. 106	48

POINTS, GLAZIERS'.	
No. 1, 2 and 3...per doz. pkgs.	65c

POKERS, STOVE.	
Wrt Steel, str't or bent,	
per doz.	\$0 75
Nickel Plated, coll	
handles	1 10

POKERS, FURNACE.	
Each	\$0 50

PULLEYS.	
Furnace Tackle...per doz.	\$0 60
per gross	6 00
" Screw (en-	
cased)...per doz.	\$0 85
Ventilating Register.	
Per gross	\$9 00
Small, per pair	0 30
Large, per pair	0 50

PUNCHES.	
Machine.	Each
V. & B. No. 11-13, 1½x6	\$0 21
V. & B. No. 90, ¾x9	30
V. & B. No. 10, ¾x10	33
V. & B. No. 1-6, ¾x6	14
Center.	
V. & B. No. 50, ¾x4	\$0 15
Belt.	
V. & B. No. 101-103	\$0 27
V. & B. No. 106-107	33
V. & B. No. 110-112	42

Samson Line.	
No. 1 Hand	Doz. lots or less 40%
No. 2 Hand	3 doz. lots Less 40 & 5%
No. 4 Hand	6 doz. lots or more—Less 50%
No. 3 Bench	Less than doz. lots Less 25%
	Doz. lots or more—Less 40%

Extra Punches and Dies for	
Samson:	
No. 1 Hand	Less than doz. lots—Less 25%
No. 2 Hand	Doz. lots, Less 33½%
No. 4 Hand	3 doz. lots, Less 40%
No. 3 Bench	6 doz. lots or more, Less 40 & 10%

PUTTY.	
Commercial Putty, 100-lb.	
kits	\$3 55

QUADRANTS.	
Malleable Iron Damper	10%

FLOOR REGISTERS AND BORDERS.	
Cast Iron	25%
Steel and Semi-Steel	40%
Baseboard	40%
Adjustable Ceiling Ventilators	40%
Register Faces—Cast and Steel.	
Japanned, Bronzed and Plated.	
4x6 to 14x14	40%
Large Register Faces—Cast.	
14x14 to 38x42	60%
Large Register Faces—Steel.	
14x14 to 38x42	65%

ROOFING.	
Per Square	
Best grade, slate surf. prep'd	\$2 00
Best talc surfaced	2 25
Medium talc surfaced	1 65
Light talc surfaced	1 05
Red Rosin Sheetting, per ton	62 00

ROPE.	
Cotton.	
Sisal.	
1st Quality, base	14½ to 16½c
No. 2	12½ to 15½c
Manilla.	
1st Quality standard	
brands	17½ to 19½c
No. 2	16½ to 18½c
Hardware Grade, per lb.	14½c

SAWS.	
Butchers'.	
Atkins No. 2, 14-in.	\$12 75
" No. 2, 18-in.	14 30
" No. 7, 16-in.	15 85
" No. 2, 22-in.	16 92
" No. 7, 20-in.	18 05
" No. 7, 24-in.	20 20
" No. 7, 28-in.	22 35

Compass.	
Atkins No. 2, 10-in.	\$ 5 45
" No. 10, 10-in.	5 60
" Blades, No. 2, 10-in.	3 25
" No. 2, 10-in.	3 30

Cross-Cut.	
Atkins No. 221, 4-ft.	\$3 03
" No. 221, 6-ft.	4 45
" No. 221, 8-ft.	6 07

Hand.	
Copper Burrs only	40%
No. 96, 20 in.	21 70

Hand and Rip.	
Atkins No. 54, 20-in.	\$19 50
" No. 54, 26-in.	24 40
" No. 53, 16-in.	18 10
" No. 53, 20-in.	22 90
" No. 53, 24-in.	26 60
" No. 53, 28-in.	31 45
" No. 53, 30-in.	34 15

Keyhole.	
Atkins No. 1 complete	\$3 10
" No. 2 complete	3 70

Miter Box.	
Atkins No. 1, 4x20	\$32 65
" No. 1, 5x22	38 00
" No. 1, 6x22	42 20

Pruning.	
Atkins No. 20, 12-in.	\$ 8 45
" No. 10, 16-in.	18 15

Wood.	
Atkins No. 202	\$ 7 19
" No. 318	8 75
" No. 906	15 50
" No. 1509	16 56

SCRAPERS.	
Box.	
No. 6, six blade each	35c
Hog.	
No. 6, each	27c
Floor (Stearns).	
No. 10, each	\$11 50

SCREEN DOOR HINGES	
Cast Iron	gross \$13 00
Steel	" 9 50

SCREWS.	
Wood.	
F. H. Bright	80-5%
R. H. Blued	78-5%
F. H. Jap'd	74-5%
F. H. Brass	76-5%
R. H. Brass	74-5%
Sheet Metal.	
No. 7, ½x½, per gross	\$0 55
No. 10, ¾x3/16, per gross	75
No. 14, ¾x½, per gross	90

SCREW DRIVERS.	
Uncle Sam Standard Head.	
2 inches, each	\$ 45
5 inches, each	52
8 inches, each	68
12 inches, each	1 02
Uncle Sam Insulated Head.	
3 inches, each	\$ 49
5 inches, each	57
8 inches, each	76
12 inches, each	1 14

SETS.	
Nail.	
V. & B.	
No. 100, in cardboard	boxes doz. \$1 46
No. 100, in wooden boxes.	Doz. 1 53
No. 5, in cardboard boxes.	doz. 1 31
No. 5, in wooden boxes.	doz. 1 37

Rivet.	
Farmers'	\$0 19
Tinners' 3-4	0 40
00-0	0 60
Saw.	
Atkins No. 10...per doz.	\$3 80
" No. 12....	6 20

SHEARS.	
Nickel Plated, Straight,	6" \$13 90
" " " "	7" 14 81
" " " "	8" 16 86
Japanned, Straight	6" 11 00
" " " "	7" 12 40
" " " "	8" 13 80

SHEARS, TINNERS' & MACHINISTS'.	
Viking	\$22 00

Lennox Throatless.	
No. 13	35%
Shear blades	10%
(f. o. b. Marshalltown, Iowa.)	

Peerless Steel Squaring.	
Foot Power.	
No. 1-30", 18 ga. cap.	15%
No. 2-36", 18 ga. cap.	15%
No. 4-52", 18 ga. cap.	15%
No. 10-120", 22 ga. cap.	15%
No. 4A-52", 16 ga. cap.	15%

Cast Iron Foot Power.	
No. 01, 30", 18 ga. cap.	15%

Power Driven.	
(No. 100 Series, 2 Shaft Drive.)	
No. 142-42", 18 ga. cap.	15%
(No. 200 Series, 2 Shaft Under-	
neath Drive.)	
No. 242-42", 14 ga. cap.	15%
(No. 300 Series, 3 Shaft Under-	
neath Drive.)	
No. 342-42", 10 ga. cap.	15%
No. 372-72", 10 ga. cap.	15%
(No. 500 Series, 3 Shaft Under-	
neath Drive.)	
No. 596-96", 10 ga. cap.	15%
No. 600 Series, 3 Shaft Under-	
neath Drive.)	
No. 6120-120", 3/16" cap.	15%

SHOES.	
Milcor.	
Galv. Std. Gauge, Plain or	
corg. round flat crimp	65%
26 gauge round flat crimp	40%
24 gauge round flat crimp	10%
Conductor	65%

SHOVELS AND SPADES.	
Coal.	
Hubbard's.	
No.	A B C D
1	\$16 00 15 10 14 45 13 70
2	16 35 15 60 14 85 14 10
3	16 75 16 00 16 25 14 40
4	17 10 16 35 16 60 14 95

Post Drains & Ditching.	
Hubbard's.	
Size	A B C
14"	\$17 15 \$16 40 \$15 65
16"	17 50 16 75 16 00
18"	17 85 17 10 16 35
20"	18 20 17 45 16 70
22"	18 55 17 80 17 05

Alaska Steel.	
D-Handle	per doz. \$2 50
Long Handle	" 3 00

SIFTERS.	
Genuine Hunters, doz.	\$2 50

SKATES.	
Ice, Men's and Boys'.	Per Pair
Key Clamp-rocker—bright	
finish	\$ 76
Key Clamp-rocker—nickel	
finish	1 10
Key Clamp-rocker—pol-	
steel	1 36
Key Clamp-rocker—pol-	
Skate outfit	4 75
Women's and Girls'.	
¾" Key Clamp-rocker	\$1 31
" " " " " " " " " " " "	hockey 1 33
Ice Skate outfit	5 00

Roller.	
Ball Bearing—Boys'	\$1 45
Copper Burrs only	30%
Ball Bearing—Girls'	1 55

NEW DOUBLE TRUSS BENDING BRAKE



Write for full details on
the many valuable im-
provements made on
this brake.

GUARANTEE

We agree to replace any part of this machine or repair the machine, free of charge, should any defect develop in material or workmanship within two years from date of shipment. Defective part or the machine to be returned to us F. O. B. our factory.

FORMING MACHINE CORPORATION

F. O. B.
President

Thirty years of success in building brakes
makes possible this strong guarantee.

THE Double Truss Bending Brake is in thousands of up-to-date shops. It's the ideal bending brake, because it does your work faster, more accurately and much more economically.

The above guarantee (to be found on each New Double Truss Bending Brake) is your assurance that you are buying satisfaction.

Price of the New Double Truss Bending Brake is lower than that of any other brake of equal quality and capacity.

FORMING MACHINE CORPORATION

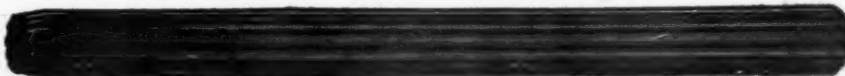
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35 Chandler St.

Buffalo, New York

Plecker's Galvanized Eave Trough and Corrugated Expanding Conductors

Made of
Keystone
Copper Bearing
Steel



Cost no more
Lasts longer
Therefore
Cheapest

CLARK-SMITH HARDWARE CO.

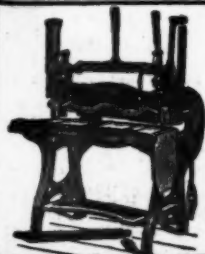
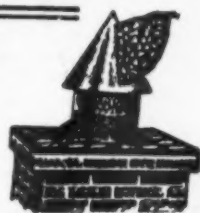
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"THE STANDARD" VENTILATOR and CHIMNEY CAP

DOES away with high stacks, swings freely in the slightest breeze and positively cures down-drafts. The strongest and most efficient combination to be had. Has no equal for chimney purposes. All jobbers sell them—write your jobber or us for prices and catalog today.

Manufactured by

STANDARD VENTILATOR CO.
LEWISBURG, PA.



TREADLE SHEAR

This TREADLE GAP SHEAR is made in all standard sizes for No. 14 and lighter gauge sheets. With it, sheets can be squared, trimmed or slit.

We make a complete line of shears, punches and bending rolls, all sizes for hand or belt drive. Write for Catalog "S."

BERTSCH & COMPANY

Cambridge City, Ind.

CHICAGO STEEL CORNICE BRAKES STANDARD OF THE WORLD



THE BEST BRAKE FOR ALL PURPOSES
Most Durable, Easiest Operated, Low in Price
Made in All Lengths and to Bend All Gauges of
Metal. Over 21,000 in use.

WRITE FOR PARTICULARS

DREIS & KRUMP MFG. CO., 7404 Loomis Street, CHICAGO

WE have a new Book Catalog—
just off the press—write for your
copy today.

AMERICAN ARTISAN

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Hero Furnace Co.....	—		
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Homer Furnace Co.....	—		
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Honeywell Heating Spec. Co. —	—		
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I			
Independent Register & Mfg. Co. —	—		
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International Heater Co.....	—		
Iwan Bros. Co.....	—		

SNIPS, TINNERS'.

Clover Leaf	40 & 10%
National	40 & 10%
Star	50%
Milcor	Net

SQUARES.

Steel and Iron.....	Net
(Add for bluing, \$3.00 per doz. net.)	
Mitre	"
Try	"
Try and Bevel.....	"
Try and Mitre	"
Fox's	per doz. \$6.00
Winterbottom's	10%

STAPLES.

Blind.....	per lb. 21c @ 22c
Barbed	" 16 @ 19c
Butter, Tub.....	" 16 @ 19c
Fence.....	per 100 lbs. \$5 45
Polished	" 6 15
Galvanized	" 6 15
Netting.....	per 100 lbs. \$6 54
Galvanized	per 100 lbs. \$6 54
Wrought.....	
Wrought Staples, Hasps and	
Staples, Hasps, Hooks and	
Staples, and Hooks and	
Staples	50 & 10%
Extra heavy	35%

STONES.

Axe.....	
Hindustan	per lb. New Nets
More Grite	"
Washita	"
Emery.....	
No. 126	per doz. New Nets
Oil Mounted.....	
Arkansas Hard	per doz. New Nets
No. 7.....	"
Arkansas Soft.....	"
Washita No. 717	"
Oil—Unmounted.....	
Arkansas Hard per lb. New Nets	
boxes, per lb.....	15c
Upholsterers' 6-oz., 25 lb.	
boxes, per lb.....	15 1/2c

TAPES, MEASURING.

Asses' Skin	List & 40%
-------------------	------------

THERMOMETERS.

Tin Case.....	per doz. 80c & \$1 25
Wood Backs	2 00 & 12 00
Glass	12 00

TIES.

Bale.....	
Less than Carload Lots.....	70%
Arkansas Soft.....	"
Lilly White.....	"
Queer Creek.....	"
Washita.....	"
Seythe.....	
Black Diamond per gro. New Nets	
Crescent	"
Green Mountain.....	"
LaMolle	"
Extra Quinine	"
bog	"
Red End	"

STOPS, BENCH.

No. 10 Morrill pat-	
tern	per doz. \$11 08
No. 11 Stearns pat-	
tern	10 00
No. 15 Smith pat-	
tern	7 00

STOPPERS, FLUE.

Common	per doz. \$1 10
Gem, No. 1.....	1 10
Gem, flat, No. 3.....	1 00

STRETCHERS.

Carpet.....	
Ballard's	per doz. \$3 30
Excelsior	5 25
Malleable Iron	70
Perfection	6 30
King	4 50
Wire.....	
O. S. Elwood, No. 1 per doz. Nets	
O. S. Elwood, No. 2	

SWIVELS.

Malleable Iron	per lb. \$0 10
Wrought Steel	per gro. 4 50

TACKS.

Bill Posters' 6-oz., 25-lb.	
-----------------------------	--

TRAPS.

Mouse and Rat.....	Per Gross
Sure Catch Mouse Traps.....	\$ 2 50
Vim Mouse Traps.....	2 50
Short Stop Mouse Traps.....	2 40
Wood Choker Mouse	
Traps, 4 hole	11 25
Sure Catch Rat Traps.....	Per Doz.
Dead Easy Rat Traps.....	\$ 0 35
Packed in One Bushel Band Stave	
Baskets.....	0 00

	List per Bushel
Sure Catch Mouse Traps	
(350 Traps)	\$ 6 25
Short Stop Mouse Traps	
(350 Traps)	6 00
Sure Catch Rat Traps (54	
Traps)	3 30
Short Stop Rat Traps (54	
Traps)	3 75

Assorted Mouse and Rat Traps.	
	List per Bushel.
Sure Catch (216 Mouse	
Traps and 26 Rat	
Traps)	\$ 5 65
Short Stop (216 Mouse	
Traps and 26 Rat	
Traps)	5 40

TROWELS.

Cement.....	
Atkins No. 6.....	\$19 50
No. 9.....	25 50

TWINE.

White Cotton.....	
Eureka, 4-ply	per lb. 30c
Jute.....	
Cattle Wire — Galvanized	
catch weight spool, per	
3-ply and 6-ply Bale Lots	22 1/2c

VALLEY.

Milcor	
Galv. formed or roll.....	60%

VENTILATORS.

Standard	\$0 to 40%
----------------	------------

VISES.

No. 700 Hand.....	
Inches	4 1/2 5 5 1/2
Doz	\$11 15 12 00 14 25
No. 701. In. 4	5 6
Doz	\$11 15 13 00 16 70
No. 1, Genuine Wentworth,	
Noiseless Saw.....	per doz. 9 25
No. 3, Genuine Wentworth,	
Noiseless Saw.....	per doz 12 75
No. 500, All Steel Folding	
Saw	per doz. 16 00

WASHERS.

Over 1/2 in. barrel lots	
per 100 lbs.	\$6 25
Iron and Steel.....	
In. 5/16	1/2 1/2 1/2
10 1/2c 9 1/2c 7 1/2c 7 1/2c	7 2/5c

WEATHER STRIPS.

Metallic Stretched.....	
1/2 in., per 100 ft.....	\$1 30
3/4 in., per 100 ft.....	2 20
Wood and Felt.....	
1/2 in., per 100 ft.....	\$1 55
3/4 in., per 100 ft.....	1 55

WEIGHTS.

Hitching	per lb. Nets
Sash—f. o. b. Chicago	
Smaller lots, per ton.....	\$47 50

WHEEL BARROWS.

Common Wood Tray.....	\$3 50
Steel Tray	5 50
Steel leg, garden	6 00

WIRE.

Plain annealed wire, No. 8	
per 100 lbs.	3 55
Galvanized barbed wire, per	
100 lbs.	4 07
Wire cloth — Black painted,	
12-mesh, per 100 sq. ft.....	2 10
Cattle Wire—galvanized	
catch weight spool, per	
100 lbs.	4 22
Galvanized Hog Wire, 30 red	
spool, per spool	3 65
Galvanized plain wire, No. 9,	
per 100 lbs.	4 15
Stove Pipe, per stone.....	1 10

WOOD FACES.

50% off list.

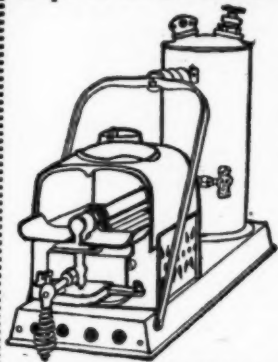
WRENCHES.

Coes Steel Handle, 6-in.....	40-10%
" " " 8-in.....	40-10%
" " " 10-in.....	40-10%
" " " 12-in.....	40-10%
Coes Knife-Handle, 6-in.....	40-10%
" " " 8-in.....	40-10%
" " " 10-in.....	40-10%
" " " 12-in.....	40-10%
Coes All Patterns.....	40-10%

WRINGERS.

No. 730, Guarantee per doz.	\$55 50
No. 770, Bicycle	52 50
No. 670, Domestic	48 50
No. 110, Brighton	48 50
No. 750, Guarantee	55 50
No. 740, Bicycle	52 50
No. 22, Pioneer	29 00
No. 2, Superb	29 00

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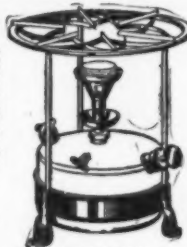
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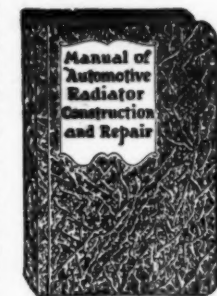
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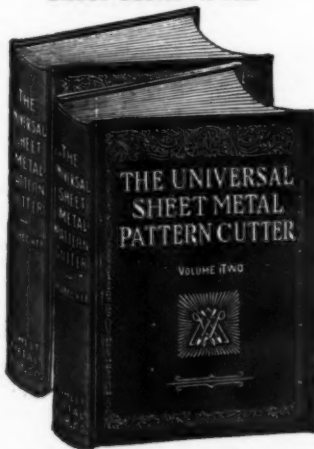
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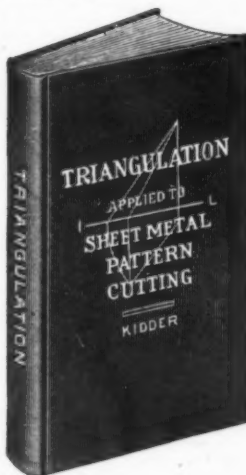
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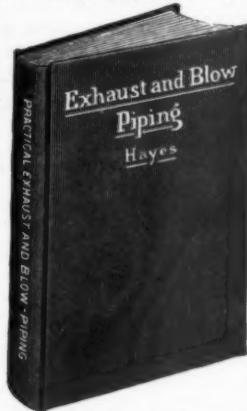
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For paid yearly subscribers, **AMERICAN ARTISAN AND HARDWARE RECORD** will insert under this head advertisements of not more than fifty words **WITHOUT CHARGE**. Employers wishing to secure employees, parties desiring to purchase or sell business, secure partners, or to exchange, etc., will find that these pages offer excellent opportunities to satisfy their wants. Clerks and tinsmiths looking for situations will find it to their advantage to use these columns. Those who respond to these announcements please mention that they "READ THE ADVERTISEMENTS IN AMERICAN ARTISAN AND HARDWARE RECORD."

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LIGHTNING RODS—Dealers who are selling Lightning Protection will make money by writing us for our latest Factory to Dealer Prices. We employ no salesmen and save you all overhead charges. Our Pure Copper Cable is endorsed by the Mutual Insurance Companies and the National Board of Fire Underwriters. Write today for samples and prices. **L. K. DIDDIE CO.**, Marshfield, Wis.

For Sale—Set of tinner's tools. Address B-59, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Ill. 24-3t

For Sale—Up-to-date Heating and Plumbing Shop in a progressive town in Indiana; population of 2,000; doing a fine business; good reason for wanting to sell. Address Box 472, Flora, Indiana. 21-6t

Wanted to Buy—Am interested in securing good location for hardware store in Wisconsin or Minnesota. Prefer stock of \$3,000 to \$5,000 provided it can be bought right. Address B-67, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 25-3t

For Sale—Sheet metal shop established 25 years. Complete set of tools and a good clean stock; good territory. Invoice \$1,500.00 with truck. \$500.00 cash. Reason for selling—retiring. Address B-54, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 22-3t

For Sale—Plumbing and heating stock and tools. A good business and plenty of it; in a good farming community village; of about 1,000; too much other business reason for selling; easy terms. Address B-64, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 25-3t

For Sale—Tin Shop in county seat of 2,500 population; in Northwestern Iowa; good equipment of tools doing a good business; hardly any competition; reason for selling, wish to locate in South Dakota. Address B-58, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 23-3t

For Sale—1 air compressor and ½ hp. A. C. motor; 1 lot pipe cutting and threading tools up to 4-inch. Pipe tongs, wrenches, vise, reamer, etc. A few tinner's tools and machines, all or separately, at a bargain. Address C. A. Roy, 383 East Third Street, Corning, New York. 24-3t

For Sale—Tin shop and furnace business in county seat town; in Northwest Iowa; population 2,800; doing a good business. Only one other shop in town; good reason for selling; stock and tools invoice about \$1,200. Address B-53, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 22-3t

BUSINESS CHANCES

For Sale—Tin shop and plumbing, in Oil Belt of Texas. Only shop in Liberty County, near Houston. Will sell or lease. Reason for selling, old age. Address H. W. Gazlay, Dayton, Texas. 24-3t

Wanted—Job lot of one or more cars Rangers or Heaters. Give price and terms. Address B-70, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 26-3t

Wanted—Young man for retail hardware store capable of driving light truck and general usefulness for south side Chicago, experience not necessary. Address Henry Stuckart, 2511-2519 Archer Avenue, Chicago, Illinois. 26-2t

For Sale—Set of Burrit roofing seamers (2) and a set of 1¼ and 1½ roofing tongs for sale price—\$12.00 for the lot. They are in good condition. Address B-63, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 24-3t

I wish to retire from the sheet metal business and want to sell my property, with or without tinner's tools. Party would have to purchase small stock of sheets and supplies. I have a 11 room house with furnace and bath; on corner lot on the main street, well located. Party buying can rent furnished rooms if so desired; am well established and have always had plenty of work. Will sell for \$3,500, all or two-thirds cash. Will invoice stock; this is the only shop in town. Address B-48, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 21-6t

HELP WANTED

Wanted—Tinner's at once. DeWeese, 814 Barr Street, Fort Wayne, Indiana. 26-3t

Wanted—Sheet metal worker at once. J. R. Sweet, Wilmette, Illinois. Phone Wilmette 1247. 24-3t

Wanted—Four or five good sheet metal men. We have open shops. Steady employment to the right men. Address E. W. Jones, Secretary, 309 Ohio Street, Terre Haute, Indiana. 23-3t

Wanted—An all round man who can read blue prints, lay out his own work, and also install furnaces. Good opening for the right man. We do general sheet metal work, contracting, tank work, and in fact everything usually done in a small town shop. Address B-65, care of **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 25-3t

Wanted—Salesmen who call on sheet metal trade and hardware dealers in Iowa only—sell as a side line on commission basis ventilators, metal furniture, tables, chairs, cabinets, etc.; state your territory—good proposition for the right man. Answer at once, B-46, care of **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 21-3t

Help Wanted—Need at once man who can take charge of shop, able to do tinning, furnace work, eaves, roofing, sheet metal work and with or without plumbing experience. Steady job. State your lowest salary in first letter. Good Iowa town. Address B-61, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 24-3t

Have a position for experienced furnace and stove sales manager to take complete charge of furnace and stove department of old established hardware firm; located in eastern city of 600,000 population; must be able to invest some capital and have the best of references. Yearly sales \$140,000. Address B-52, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 22-4t

We are willing to pay well for the service of a live capable foreman with experience and executive ability to take charge of our shop; we are located in the South's best city of seventy thousand; work twenty to thirty men; general sheet metal work; tile and composition roofing; give full details with application. Address B-68, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 26-2t

HELP WANTED

Wanted at Once—Competent sheet metal worker of good character; good wages; steady job; open shop conditions. Address H. R. Naber, 307 Boonville Avenue, Springfield, Missouri. 24-3t

Wanted—Man who can do plumbing and hot air furnace work. Prefer man from a small town. Address B-66, care of **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 25-3t

Wanted—Man who can do tinning, steamfitting and plumbing; must have plumbing license. Good job for a steady and honest man. Address B-62, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 24-3t

SITUATION WANTED

Situation Wanted—Twenty years sheet metal experience in all branches; married; 39 years old. Address B-60, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 24-3t

Wanted—Position as tinner and furnace man or clerk in hardware store; have had over 25 years' experience and thoroughly understand the furnace game. Iowa preferred. Address J. M. Shaw, Box 174, Williamsburg, Iowa. 22-3t

Situation Wanted—By plumber, steamfitter and apprentice. Two years experience on larger class of work. Steady work desired and opportunity to finish trade. References. Address Geo. C. Moore, 674 South Jefferson Street, Marshall, Missouri. 25-3t

Position Wanted—As working foreman by a first class sheet metal worker; can read blue prints; also a good layout man; with 25 years' experience at all branches of the trade; please state wages and hours in first letter. Address Ward B. Cory, Russell, Kansas. 26-3t

Situation Wanted—An experienced stove and furnace factory salesman or manager open for proposition any time; twenty years with high grade lines; if traveling, only Wisconsin or California considered. Address B-56, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 22-3t

Situation Wanted—By sheet metal worker of large general experience, including job and furnace work; first grade shop man and layer out; quick and accurate; competent to take charge. Address with full particulars, B-69, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 26-3t

Situation Wanted—By sheet metal worker with 25 years' experience; can get out cornice and skylights, blow pipe and elbow work from plans and erect same; furnace work, metal ceilings, and can do all kinds inside job work, roofing and spouting. Illinois or Indiana preferred. Address Otis Reed, 410 N. Grant St., Danville, Illinois. 25-3t

Situation Wanted—By a good all-around tinner, plumber, steamfitter, pump and radiator repairing; can install furnaces, do anything that comes to a shop; worked over 30 years at the trades; married; prefer steady job; state wages in first letter. Address B-57, care **AMERICAN ARTISAN**, 620 South Michigan Avenue, Chicago, Illinois. 22-3t

Situation Wanted—A first class sheet metal man with twenty years' experience in every branch of the trade wants steady position; cornice, skylights, heating and ventilating, blowpipe, roofing, anything including slate roofing; several years as foreman over small and large jobs; married and sober; go anywhere. E. W. Hiatt, R. F. D. No. 1, Box 160, Redford, Michigan. (Detroit district.) 26-3t

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Wanted—Groover that grooves 1¼" pipe, 26 or 36" long, 28 Ga. material; state make, condition and lowest price. Address Box 147, Comfort, Texas. 26-3t

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Wanted—Good used 30 inch Barfolder; give make, condition, capacity, and price in first letter. Address Lock Box 38, Fredonia, Pennsylvania. 25-3t

Wanted to Buy—1 No. 2 P. S. and W. combination shear and punch. Must be in first-class condition. State cash price. L. R. Hamman, 507-511 East Prairie Avenue, Decatur, Illinois. 26-3t

Wanted—1 Power Double Seamer for seaming bottoms on 26 gauge pans, 14 inches in diameter by 4 inches deep. Address Wm. Warnock Co., Sioux City, Iowa. 25-2t

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WIRE

electrical, rope, barbed, plain, nails, tacks, spikes, bale-ties, hoops, springs, netting, wire fences, steel posts, steel gates, trolley wire, rail bonds, flat wire (strip steel), piano wire, horse shoes, round and odd-shape wire, screw stock concrete reinforcement. Aerial Tramways.

Illustrated Books describing uses, Free

American Steel & Wire

Chicago—New York

Company

**Any
Hardware Store**

can always use new ideas to help increase its sales.

Be sure to read the pages of **AMERICAN ARTISAN AND HARDWARE RECORD** every week—you will secure ideas which you can use to help increase the sales of your hardware store.

COES

FOR the customer who wants a Screw Wrench to do all sorts of work—to stand up under all kinds of strains—the Coes Steel Handle is the kind to sell.

An all-steel wrench, properly heat treated, wearing parts hardened.

The ideal wrench for "all-round rough use."

How is Your Steel-Handle Stock?

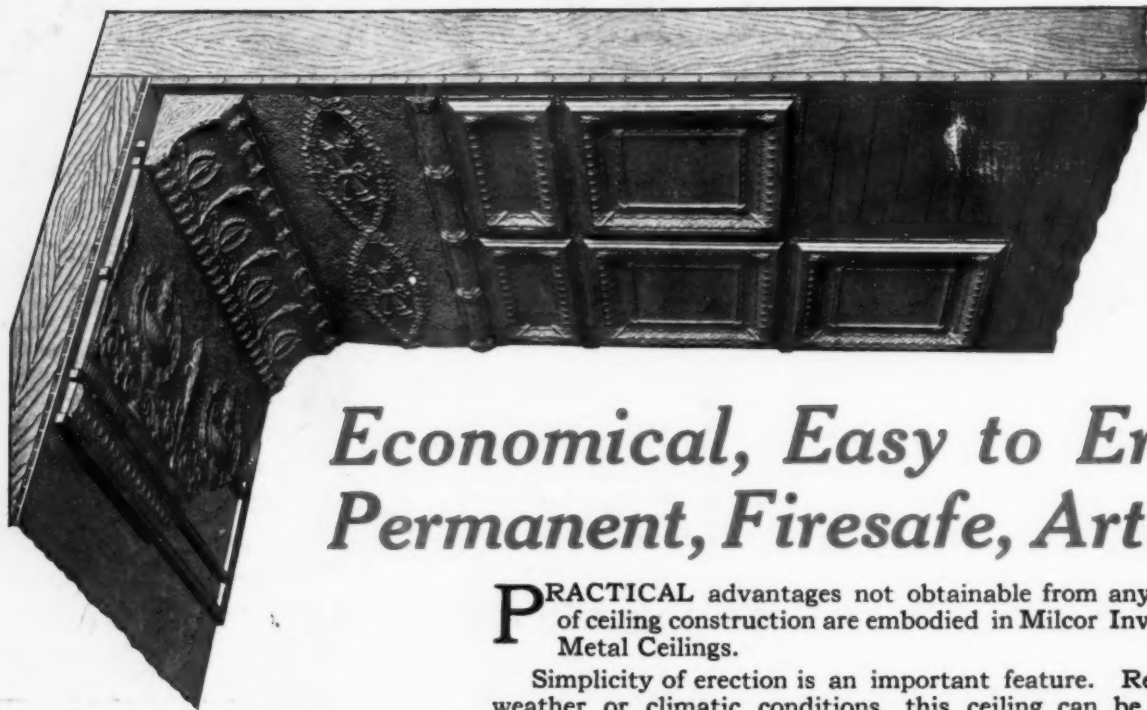
Coes Wrench Co.

ESTABLISHED 1841 IN
Worcester, Mass.

J C McCARTY & CO., 29 Murray Street, New York
JOHN H. GRAHAM & CO.,
113 Chambers St., New York
FENWICK FRERES, 8 Rue de Rocroy, Paris, France



STEEL HANDLE



Economical, Easy to Erect, Permanent, Firesafe, Artistic!

PRACTICAL advantages not obtainable from any other type of ceiling construction are embodied in Milcor Invisible Joint Metal Ceilings.

Simplicity of erection is an important feature. Regardless of weather or climatic conditions, this ceiling can be erected on scheduled time. High priced labor is not required—the Invisible Joint feature makes it easy for anyone to do a perfect job on Milcor Ceilings.

Once up, these ceilings are there to stay. They can't crack, sag or fall off. Less upkeep expense is involved than with any other type of ceiling. Cleaning them is simple and they are the most easily refinished of all ceilings.

Their fire-resistive qualities are important. In actual service and in various scientific tests the fire-safeness of metal ceilings has been emphatically proven.

And Milcor Metal Ceilings are good looking—they faithfully reproduce ornamental stucco effects. Our wide variety of designs permits almost countless combinations.

It pays to sell products that have such practical advantages as Milcor Metal Ceilings. Tell your Trade!



The repressed bead and die-cut nail holes are important features which add much to the practicality of Milcor Invisible Joint Ceilings. Perfect erection is certain because of these features.

"Invisible Joint"
TRADE MARK

SPECIAL CEILING SERVICE

Lump-sum estimates furnished free, and without obligation, whenever requested. Use this estimating service constantly! Watch building operations. Go after ceiling business!

HAVE YOU DISCUSSED CEILING REPAIRS WITH YOUR SCHOOL BOARD?

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